

### **Graph entropy based on the number of spanning forests of c-cyclic graphs**

Wan, P., Tu, J., Dehmer, M., Zhang, S. & Emmert-Streib, F., 15 Dec 2019, In : Applied Mathematics and Computation. 363, 124616.

Research output: Contribution to journal > Article > Scientific > peer-review

### **Hyperbolic Function Theory in the Skew-Field of Quaternions**

Eriksson, S-L. & Orelma, H., 1 Nov 2019, In : Advances in Applied Clifford Algebras. 29, 5, 97.

Research output: Contribution to journal > Article > Scientific > peer-review

### **Non-destructive tree volume estimation through quantitative structure modelling: Comparing UAV laser scanning with terrestrial LIDAR**

Brede, B., Calders, K., Lau, A., Raunonen, P., Bartholomeus, H. M., Herold, M. & Kooistra, L., 1 Nov 2019, In : Remote Sensing of Environment. 233, 111355.

Research output: Contribution to journal > Article > Scientific > peer-review

### **Fast fourier color constancy and grayness index for ISPA illumination estimation challenge**

Qian, Y., Chen, K. & Yu, H., 17 Oct 2019, *ISPA 2019 - 11th International Symposium on Image and Signal Processing and Analysis*. Loncaric, S., Bregovic, R., Carli, M. & Subasic, M. (eds.). IEEE, p. 352-354 3 p. (International Symposium on Image and Signal Processing and Analysis, ISPA; vol. 2019-September).

Research output: Chapter in Book/Report/Conference proceeding > Conference contribution > Scientific > peer-review

### **Studying the inertias of LCM matrices and revisiting the Bourque-Ligh conjecture**

Haukkanen, P., Mattila, M. & Mäntysalo, J., 14 Oct 2019, In : Journal of Combinatorial Theory. Series A. 171, 105161.

Research output: Contribution to journal > Article > Scientific > peer-review

### **On Computational Complexity Reduction Methods for Kalman Filter Extensions**

Raitoharju, M. & Piche, R., 7 Oct 2019, In : IEEE Aerospace and Electronic Systems Magazine. 34, 10, p. 2-19 18 p.

Research output: Contribution to journal > Article > Scientific > peer-review

### **Multiplierless filtered-OFDM transmitter for narrow-band IoT devices**

Loulou, A. E., Yli-Kaakinen, J., Levanen, T., Lehtinen, V., Schaich, F., Wild, T., Renfors, M. & Valkama, M., 2 Oct 2019, In : IEEE Internet of Things Journal. 16 p.

Research output: Contribution to journal > Article > Scientific > peer-review

### **The Graph Curvature Calculator and the curvatures of cubic graphs**

Cushing, D., Kangaslampi, R., Lipiäinen, V., Liu, S. & Stagg, G. W., 14 Sep 2019, In : Experimental Mathematics.

Research output: Contribution to journal > Article > Scientific > peer-review

### **Tomographic inversion of gravity gradient field for a synthetic Itokawa model**

Sorsa, L-I., Takala, M., Bambach, P., Deller, J., Vilenius, E., Agarwal, J., Carroll, K. A., Karatekin, Ö. & Pursiainen, S., 3 Sep 2019, In : Icarus. 336, 113425.

Research output: Contribution to journal > Article > Scientific > peer-review

### **Hypermonogenic Plane Wave Solutions of the Dirac Equation in Superspace**

Adán, A. G., Orelma, H. & Sommen, F., 1 Sep 2019, In : Advances in Applied Clifford Algebras. 29, 4, 71.

Research output: Contribution to journal > Article > Scientific > peer-review

### **Similar temperature sensitivity of soil mineral-associated organic carbon regardless of age**

Karhu, K., Hilasvuori, E., Järvenpää, M., Arppe, L., Christensen, B. T., Fritze, H., Kulmala, L., Oinonen, M., Pitkänen, J. M., Vanhala, P., Heinonsalo, J. & Liski, J., 1 Sep 2019, In : Soil Biology and Biochemistry. 136, 107527.

Research output: Contribution to journal > Article > Scientific > peer-review

### **Nanosatellite attitude estimation using Kalman-type filters with non-Gaussian noise**

Cilden-Guler, D., Raitoharju, M., Piche, R. & Hajiyev, C., Sep 2019, In : Aerospace Science and Technology. 92, p. 66-76

Research output: Contribution to journal > Article > Scientific > peer-review

### **On the Structure of Octonion Regular Functions**

Kauhanen, J. & Orelma, H., Sep 2019, In : *Advances in Applied Clifford Algebras*. 29, 4, 17 p., 77.

Research output: Contribution to journal > Conference article > Scientific > peer-review

### **On the Succinctness of Atoms of Dependency**

Vilander, M. & Lück, M., 20 Aug 2019, In : *Logical Methods in Computer Science*. 15, 3, p. 17:1-17:28 28 p.

Research output: Contribution to journal > Article > Scientific > peer-review

### **Reduced Order Controller Design for Robust Output Regulation**

Paunonen, L. & Phan, D., 22 Jul 2019, In : *IEEE Transactions on Automatic Control*.

Research output: Contribution to journal > Article > Scientific > peer-review

### **Hosoya entropy of fullerene graphs**

Ghorbani, M., Dehmer, M., Rajabi-Parsa, M., Emmert-Streib, F. & Mowshowitz, A., 1 Jul 2019, In : *Applied Mathematics and Computation*. 352, p. 88-98 11 p.

Research output: Contribution to journal > Article > Scientific > peer-review

### **Approximate Controllability for Navier–Stokes Equations in 3D Rectangles Under Lions Boundary Conditions**

Phan, D. & Rodrigues, S. S., Jul 2019, In : *Journal of Dynamical and Control Systems*. 25, 3, p. 351-376 26 p.

Research output: Contribution to journal > Article > Scientific > peer-review

### **An architectural understanding of natural sway frequencies in trees**

Jackson, T., Shenkin, A., Moore, J., Bunce, A., van Emmerik, T., Kane, B., Burcham, D., James, K., Selker, J., Calders, K., Origo, N., Disney, M., Burt, A., Wilkes, P., Raunonen, P., Gonzalez de Tanago Menaca, J., Lau, A., Herold, M., Goodman, R. C., Fourcaud, T. & Malhi, Y., 28 Jun 2019, In : *Journal of the Royal Society. Interface*. 16, 155, 1 p.

Research output: Contribution to journal > Article > Scientific > peer-review

### **Robust output regulation of counter-flow heat exchangers**

Huhtala, K. & Paunonen, L., 1 Jun 2019, *3rd IFAC Workshop on Control of Systems Governed by Partial Differential Equations, CPDE 2019*. IFAC, p. 201-206 6 p. (IFAC-PapersOnLine; vol. 52).

Research output: Chapter in Book/Report/Conference proceeding > Conference contribution > Scientific > peer-review

### **The internal model principle for boundary control systems with polynomially bounded exogenous signals**

Humaloja, J-P. & Paunonen, L., 1 Jun 2019, *3rd IFAC Workshop on Control of Systems Governed by Partial Differential Equations, CPDE 2019*. IFAC, p. 156-161 6 p. (IFAC-PapersOnLine; vol. 52).

Research output: Chapter in Book/Report/Conference proceeding > Conference contribution > Scientific > peer-review

### **Tree biomass equations from terrestrial LiDAR: A case study in Guyana**

Lau, A., Calders, K., Bartholomeus, H., Martius, C., Raunonen, P., Herold, M., Vicari, M., Sukhdeo, H., Singh, J. & Goodman, R. C., 1 Jun 2019, In : *Forests*. 10, 6, 527.

Research output: Contribution to journal > Article > Scientific > peer-review

### **Algorithms and Logic as Programming Primers**

Niemelä, P., Valmari, A. & Ali-Löytty, S., Jun 2019, *Computer Supported Education: 10th International Conference, CSEDU 2018, Revised Selected Papers*. Springer Nature, p. 357-383 (Communications in Computer and Information Science; vol. 1022).

Research output: Chapter in Book/Report/Conference proceeding > Chapter > Scientific > peer-review

### **Gaussian Process Regression for Forest Attribute Estimation From Airborne Laser Scanning Data**

Varvia, P., Lähivaara, T., Maltamo, M., Packalen, P. & Seppänen, A., Jun 2019, In : *IEEE Transactions on Geoscience and Remote Sensing*. 57, 6, p. 3361-3369

Research output: Contribution to journal > Article > Scientific > peer-review

### Remarks on Similarities among Ternary Bent Functions

Stankovic, R. S., Stankovic, M., Astola, J. T. & Moraga, C., 1 May 2019, *2019 IEEE 49th International Symposium on Multiple-Valued Logic, ISMVL 2019*. IEEE, p. 79-84 6 p.

Research output: Chapter in Book/Report/Conference proceeding > Conference contribution > Scientific > peer-review

### Asymptotics for periodic systems

Paunonen, L. & Seifert, D., May 2019, In : *Journal of Differential Equations*. 266, 11, p. 7152-7172

Research output: Contribution to journal > Article > Scientific > peer-review

### On the complexity of restoring corrupted colorings

De Biasi, M. & Lauri, J., May 2019, In : *Journal of Combinatorial Optimization*. 37, 4, p. 1150-1169 20 p.

Research output: Contribution to journal > Article > Scientific > peer-review

### The shape of (7) Iris as evidence of an ancient large impact?

Hanuš, J., Marsset, M., Vernazza, P., Viikinkoski, M., Drouard, A., Broa, M., Carry, B., Fetick, R., Marchis, F., Jorda, L., Fusco, T., Birlan, M., Santana-Ros, T., Podlewska-Gaca, E., Jehin, E., Ferrais, M., Grice, J., Bartczak, P., Berthier, J., Castillo-Rogez, J., Cipriani, F., Colas, F., Dudziński, G., Dumas, C., Āž Urech, J., Kaasalainen, M., Kryszczyńska, A., Lamy, P., Le Coroller, H., Marciniak, A., Michalowski, T., Michel, P., Pajuelo, M., Tanga, P., Vachier, F., Vigan, A., Witasse, O. & Yang, B., 1 Apr 2019, In : *Astronomy and Astrophysics*. 624, A121.

Research output: Contribution to journal > Article > Scientific > peer-review

### Robust and Model Predictive Control for Boundary Control Systems

Humaloja, J.-P., 5 Mar 2019, Tampere University. 26 p. (Tampere University Dissertations; vol. 32)

Research output: Book/Report > Doctoral thesis > Collection of Articles

### Closing the gap between Earth-based and interplanetary mission observations: Vesta seen by VLT/SPHERE

Fétick, R. J. L., Jorda, L., Vernazza, P., Marsset, M., Drouard, A., Fusco, T., Carry, B., Marchis, F., Hanuš, J., Viikinkoski, M., Birlan, M., Bartczak, P., Berthier, J., Castillo-Rogez, J., Cipriani, F., Colas, F., Dudziński, G., Dumas, C., Ferrais, M., Jehin, E., Kaasalainen, M., Kryszczyńska, A., Lamy, P., Le Coroller, H., Marciniak, A., Michalowski, T., Michel, P., Mugnier, L. M., Neichel, B., Pajuelo, M., Podlewska-Gaca, E., Santana-Ros, T., Tanga, P., Vachier, F., Vigan, A., Witasse, O. & Yang, B., 1 Mar 2019, In : *Astronomy and Astrophysics*. 623, A6.

Research output: Contribution to journal > Article > Scientific > peer-review

### Homogeneous internal structure of CM-like asteroid (41) Daphne

Carry, B., Vachier, F., Berthier, J., Marsset, M., Vernazza, P., Grice, J., Merline, W. J., Lagadec, E., Fienga, A., Conrad, A., Podlewska-Gaca, E., Santana-Ros, T., Viikinkoski, M., Hanuš, J., Dumas, C., Drummond, J. D., Tamblyn, P. M., Chapman, C. R., Behrend, R., Bernasconi, L., Bartczak, P., Benkhaldoun, Z., Birlan, M., Castillo-Rogez, J., Cipriani, F., Colas, F., Drouard, A., Durech, J., Enke, B. L., Fauvaud, S., Ferrais, M., Fetick, R., Fusco, T., Gillon, M., Jehin, E., Jorda, L., Kaasalainen, M., Keppler, M., Kryszczyńska, A., Lamy, P., Marchis, F., Marciniak, A., Michalowski, T., Michel, P., Pajuelo, M., Tanga, P., Vigan, A., Warner, B., Witasse, O., Yang, B. & Zurlo, A., 1 Mar 2019, In : *Astronomy and Astrophysics*. 623, A132.

Research output: Contribution to journal > Article > Scientific > peer-review

### Improved EEG source localization with Bayesian uncertainty modelling of unknown skull conductivity

Rimpiläinen, V., Koulouri, A., Lucka, F., Kaipio, J. P. & Wolters, C. H., 1 Mar 2019, In : *NeuroImage*. 188, p. 252-260 9 p.

Research output: Contribution to journal > Article > Scientific > peer-review

### Finite element analysis of trees in the wind based on terrestrial laser scanning data

Jackson, T., Shenkin, A., Wellpott, A., Calders, K., Origo, N., Disney, M., Burt, A., Raunonen, P., Gardiner, B., Herold, M., Fourcaud, T. & Malhi, Y., 15 Feb 2019, In : *Agricultural and Forest Meteorology*. 265, p. 137-144 8 p.

Research output: Contribution to journal > Article > Scientific > peer-review

### Mathematical model order reduction in computational neuroscience

Lehtimäki, M., Paunonen, L. & Linne, M.-L., 6 Feb 2019.

Research output: Other conference contribution > Paper, poster or abstract > Scientific

### **A realistic, accurate and fast source modeling approach for the EEG forward problem**

Miinalainen, T., Rezaei, A., Us, D., Nüßing, A., Engwer, C., Wolters, C. H. & Pursiainen, S., 2019, In : *NeuroImage*. 184, 1, p. 56-67 12 p.

Research output: Contribution to journal › Article › Scientific › peer-review

### **Cuts for 3-D magnetic scalar potentials: Visualizing unintuitive surfaces arising from trivial knots**

Stockrahm, A., Lahtinen, V., Kangas, J. J. J. & Kotiuga, P. R., 2019, (Accepted/In press) In : *Computers and Mathematics with Applications*.

Research output: Contribution to journal › Article › Scientific › peer-review

### **Neighbour species richness and local structural variability modulate aboveground allocation patterns and crown morphology of individual trees**

Kunz, M., Fichtner, A., Härdtle, W., Raunonen, P., Bruelheide, H. & von Oheimb, G., 2019, In : *ECOLOGY LETTERS*. 22, 12, p. 2130-2140 11 p.

Research output: Contribution to journal › Letter › Scientific › peer-review

### **Optimal energy decay for the wave-heat system on a rectangular domain**

Batty, C., Paunonen, L. & Seifert, D., 2019, In : *SIAM JOURNAL ON MATHEMATICAL ANALYSIS*. 51, 2, p. 808-819 12 p.

Research output: Contribution to journal › Article › Scientific › peer-review

### **Quaternionic Hyperbolic Function Theory**

Eriksson, S-L. & Orelma, H., 2019, *Topics in Clifford Analysis*. Springer, p. 25-52 28 p. (Trends in Mathematics).

Research output: Chapter in Book/Report/Conference proceeding › Chapter › Scientific › peer-review

### **Simulating solar-induced chlorophyll fluorescence in a boreal forest stand reconstructed from terrestrial laser scanning measurements**

Liu, W., Atherton, J., Möttus, M., Gastellu-Etchegorry, J. P., Malenovský, Z., Raunonen, P., Åkerblom, M., Mäkipää, R. & Porcar-Castell, A., 2019, In : *Remote Sensing of Environment*. 111274.

Research output: Contribution to journal › Article › Scientific › peer-review

### **Software-defined radio prototype for fast-convolution-based filtered OFDM in 5G NR**

Gokceli, S., Levanen, T., Yli-Kaakinen, J., Turunen, M., Allen, M., Riihonen, T., Palin, A., Renfors, M. & Valkama, M., 2019, *2019 European Conference on Networks and Communications, EuCNC 2019*. IEEE, p. 235-240

Research output: Chapter in Book/Report/Conference proceeding › Conference contribution › Scientific › peer-review

### **DISCUS – The Deep Interior Scanning CubeSat mission to a rubble pile near-Earth asteroid**

Bambach, P., Deller, J., Vilenius, E., Pursiainen, S., Takala, M., Braun, H. M., Lentz, H. & Wittig, M., Dec 2018, In : *Advances in Space Research*. 62, 12, p. 3357-3368

Research output: Contribution to journal › Article › Scientific › peer-review

### **(16) Psyche: A mesosiderite-like asteroid?**

Viikinkoski, M., Vernazza, P., Hanuš, J., Le Coroller, H., Tazhenova, K., Carry, B., Marsset, M., Drouard, A., Marchis, F., Fetick, R., Fusco, T., Ďurech, J., Birlan, M., Berthier, J., Bartczak, P., Dumas, C., Castillo-Rogez, J., Cipriani, F., Colas, F., Ferrais, M., Grice, J., Jehin, E., Jorda, L., Kaasalainen, M., Kryszczyńska, A., Lamy, P., Marciniak, A., Michalowski, T., Michel, P., Pajuelo, M., Podlowska-Gaca, E., Santana-Ros, T., Tanga, P., Vachier, F., Vigan, A., Warner, B., Witasse, O. & Yang, B., 1 Nov 2018, In : *Astronomy and Astrophysics*. 619, L3.

Research output: Contribution to journal › Article › Scientific › peer-review

### **Compute mindlessly. Not! map consciously**

Niemelä, P., Mikkolainen, V. & Vuorinen, J., 1 Nov 2018, In : *Universal Journal of Educational Research*. 6, 11, p. 2669-2678 10 p.

Research output: Contribution to journal › Article › Scientific › peer-review

### **The impact crater at the origin of the Julia family detected with VLT/SPHERE?**

Vernazza, P., Broz, M., Drouard, A., Hanuš, J., Viikinkoski, M., Marsset, M., Jorda, L., Fetick, R., Carry, B., Marchis, F., Birlan, M., Fusco, T., Santana-Ros, T., Podlowska-Gaca, E., Jehin, E., Ferrais, M., Bartczak, P., Dudziński, G., Berthier, J., Castillo-Rogez, J., Cipriani, F., Colas, F., Dumas, C., Urech, J., Kaasalainen, M., Kryszczyńska, A., Lamy, P., Le Coroller, H., Marciniak, A., Michalowski, T., Michel, P., Pajuelo, M., Tanga, P., Vachier, F., Vigan, A., Warner, B., Witasse,

O., Yang, B., Asphaug, E., Richardson, D. C., Ševeček, P., Gillon, M. & Benkhaldoun, Z., 1 Oct 2018, In : *Astronomy and Astrophysics*. 618, 33477.

Research output: Contribution to journal › Article › Scientific › peer-review

#### **Quantifying branch architecture of tropical trees using terrestrial LiDAR and 3D modelling**

Lau, A., Bentley, L. P., Martius, C., Shenkin, A., Bartholomeus, H., Raunonen, P., Malhi, Y., Jackson, T. & Herold, M., Oct 2018, In : *Trees - Structure and Function*. 32, 5, p. 1219-1231 13 p.

Research output: Contribution to journal › Article › Scientific › peer-review

#### **Improvement of computational efficiency of a biochemical plasticity model**

Lehtimäki, M., Paunonen, L. & Linne, M-L., 20 Sep 2018.

Research output: Other conference contribution › Paper, poster or abstract › Scientific

#### **On the complexity of rainbow coloring problems**

Eiben, E., Ganian, R. & Lauri, J., Sep 2018, In : *Discrete Applied Mathematics*. 246, p. 38-48

Research output: Contribution to journal › Article › Scientific › peer-review

#### **A study of crown development mechanisms using a shoot-based tree model and segmented terrestrial laser scanning data**

Sievänen, R., Raunonen, P., Perttunen, J., Nikinmaa, E. & Kaitaniemi, P., 27 Aug 2018, In : *Annals of Botany*. 122, 3, p. 423-434 12 p.

Research output: Contribution to journal › Article › Scientific › peer-review

#### **Linear Model Predictive Control for Schrödinger Equation**

Humaloja, J-P. & Dubljevic, S., 9 Aug 2018, *2018 Annual American Control Conference, ACC 2018*. IEEE, p. 2569-2574 6 p.

Research output: Chapter in Book/Report/Conference proceeding › Conference contribution › Scientific › peer-review

#### **A Partial Internal Model for Approximate Robust Output Regulation of Boundary Control Systems**

Humaloja, J-P., Paunonen, L. & Kurula, M., 20 Jul 2018, *23rd International Symposium on Mathematical Theory of Networks and Systems*. p. 586-591 6 p.

Research output: Chapter in Book/Report/Conference proceeding › Conference contribution › Professional

#### **Robust controllers for a heat equation using the Galerkin approximation**

Phan-Duc, D. & Paunonen, L., Jul 2018, *Proceedings of the 23rd International Symposium on Mathematical Theory of Networks and Systems*. p. 856-863 8 p.

Research output: Chapter in Book/Report/Conference proceeding › Conference contribution › Professional

#### **Light, Shape and Space: Direct and Inverse Problems of Individual Objects and Populations**

Nortunen, H., 29 Jun 2018, Tampere University of Technology. 53 p. (Tampere University of Technology. Publication; vol. 1555)

Research output: Book/Report › Doctoral thesis › Collection of Articles

#### **Multigrid-Based Inversion for Volumetric Radar Imaging With Asteroid Interior Reconstruction as a Potential Application**

Takala, M., Us, D. & Pursiainen, S., 1 Jun 2018, In : *IEEE Transactions on Computational Imaging*. 4, 2, p. 228-240 13 p.

Research output: Contribution to journal › Article › Scientific › peer-review

#### **Stabilization to trajectories for parabolic equations**

Phan, D. & Rodrigues, S. S., 1 Jun 2018, In : *Mathematics of Control, Signals, and Systems*. 30, 2, 11.

Research output: Contribution to journal › Article › Scientific › peer-review

#### **Asymptotic Behaviour of Coupled Systems in Discrete and Continuous Time**

Paunonen, L. & Seifert, D., Jun 2018, In : *JOURNAL OF DYNAMICS AND DIFFERENTIAL EQUATIONS*. 30, 2, p. 433-445 13 p.

Research output: Contribution to journal › Article › Scientific › peer-review

### **Quantitative Tree Reconstruction from Terrestrial Laser Scanning Data and Applications**

Åkerblom, M., 25 May 2018, Tampere University of Technology. 67 p. (Tampere University of Technology. Publication; vol. 1547)

Research output: Book/Report > Doctoral thesis > Collection of Articles

### **The StarT Project Competition from the Perspective of Mathematics and Academic Literacy**

Viro, E. & Joutsenlahti, J., 4 May 2018, In : EDUCATION SCIENCES. 8, 2

Research output: Contribution to journal > Article > Scientific > peer-review

### **Paraconsistent Many-Valued Logic in GUHA Framework**

Turunen, E., 3 May 2018, In : Acta Informatica Pragensia, University of Economics, Prague. 7, 1, p. 104-111 8 p.

Research output: Contribution to journal > Article > Scientific > peer-review

### **Uncertainty in multispectral lidar signals caused by incidence angle effects**

Kaasalainen, S., Åkerblom, M., Nevalainen, O., Hakala, T. & Kaasalainen, M., 6 Apr 2018, In : Interface Focus. 8, 2, 20170033.

Research output: Contribution to journal > Article > Scientific > peer-review

### **Distribution of shape elongations of main belt asteroids derived from Pan-STARRS1 photometry**

Cibulková, H., Nortunen, H., Ďurech, J., Kaasalainen, M., Vereš, P., Jedicke, R., Wainscoat, R. J., Mommert, M., Trilling, D. E., Schunová-Lilly, E., Magnier, E. A., Waters, C. & Flewelling, H., 1 Mar 2018, In : Astronomy and Astrophysics. 611, 10 p., A86.

Research output: Contribution to journal > Article > Scientific > peer-review

### **Analysis of common rail pressure signal of dual-fuel large industrial engine for identification of injection duration of pilot diesel injectors**

Krogerus, T., Hyvönen, M. & Huhtala, K., Mar 2018, In : Fuel. 216, p. 1-9

Research output: Contribution to journal > Article > Scientific > peer-review

### **Approximate Bayesian inference methods for stochastic state space models**

Ala-Luhtala, J., 23 Feb 2018, Tampere University of Technology. 56 p. (Tampere University of Technology. Publication; vol. 1528)

Research output: Book/Report > Doctoral thesis > Collection of Articles

### **Minimal Characterization of O-notation in Algorithm Analysis**

Rutanen, K., Feb 2018, In : Theoretical Computer Science. 713, p. 31-41

Research output: Contribution to journal > Article > Scientific > peer-review

### **Robust output tracking and disturbance rejection for a 2D heat equation**

Paunonen, L., 17 Jan 2018

Research output: Artistic and non-textual form > Digital or Visual Products > Scientific

### **Analysing and Improving Student's Mathematics Skills using ICT-tools**

Pohjolainen, S., Nykänen, O., Venho, J. & Kangas, J., 8 Jan 2018, In : EURASIA JOURNAL OF MATHEMATICS, SCIENCE & TECHNOLOGY EDUCATION. 14, 4, p. 1221-1227 7 p., 14(4).

Research output: Contribution to journal > Article > Scientific > peer-review

### **NP-completeness results for partitioning a graph into total dominating sets**

Koivisto, M., Laakkonen, P. & Lauri, J., 1 Jan 2018, In : Theoretical Computer Science.

Research output: Contribution to journal > Article > Scientific > peer-review

### **On the spectral and Frobenius norm of a generalized Fibonacci r-circulant matrix**

Merikoski, J. K., Haukkanen, P., Mattila, M. & Tossavainen, T., 1 Jan 2018, In : Special Matrices. 6, 1, p. 23-36 14 p.

Research output: Contribution to journal > Article > Scientific > peer-review

### **10 kA Joints for HTS Roebel Cables**

Murtomaeki, J. S., Kirby, G., van Nugteren, J., Contat, P. A., Fleiter, J., De Frutos, O. S., Pincot, F. O., DeRijk, G., Rossi, L., Ruuskanen, J., Stenvall, A. & Wolf, F., 2018, In : IEEE Transactions on Applied Superconductivity. 28, 3  
Research output: Contribution to journal > Article > Scientific > peer-review

### **A case study of focal bayesian EEG inversion for whitney element source spaces: Mesh-based vs. cartesian orientations**

Miinalainen, T. & Pursiainen, S., 2018, *EMBECE and NBC 2017 - Joint Conference of the European Medical and Biological Engineering Conference EMBEC 2017 and the Nordic-Baltic Conference on Biomedical Engineering and Medical Physics, NBC 2017*. Springer Verlag, p. 1065-1068 4 p. (IFMBE Proceedings; vol. 65).  
Research output: Chapter in Book/Report/Conference proceeding > Conference contribution > Scientific > peer-review

### **Cauchy–Riemann Operators in Octonionic Analysis**

Kauhanen, J. & Orelma, H., 2018, In : Advances in Applied Clifford Algebras. 28, 1, 1.  
Research output: Contribution to journal > Article > Scientific > peer-review

### **Computing minimum rainbow and strong rainbow colorings of block graphs**

Keranen, M. & Lauri, J., 2018, In : Discrete Mathematics and Theoretical Computer Science. 20, 1, 22.  
Research output: Contribution to journal > Article > Scientific > peer-review

### **Engineering Mathematics Education in Finland: A Comparative Analysis of EU, Russia, Georgia and Armenia**

Pohjolainen, S. & Myllykoski, T., 2018, *Modern Mathematics Education for Engineering Curricula in Europe*. Pohjolainen, S., Myllykoski, T., Mercat, C. & Sosnovsky, S. (eds.). Birkhäuser, p. 69-75 7 p.  
Research output: Chapter in Book/Report/Conference proceeding > Chapter > Professional

### **Fair testing and stubborn sets**

Valmari, A. & Vogler, W., 2018, In : International Journal on Software Tools for Technology Transfer. p. 589-610 22 p.  
Research output: Contribution to journal > Article > Scientific > peer-review

### **Far-Field Inversion for the Deep Interior Scanning CubeSat**

Takala, M., Bambach, P., Deller, J., Vilenius, E., Wittig, M., Lentz, H., Braun, H. M., Kaasalainen, M. & Pursiainen, S., 2018, In : IEEE Transactions on Aerospace and Electronic Systems. 27 p.  
Research output: Contribution to journal > Article > Scientific > peer-review

### **Kehittämistutkimus: vuorovaikuteisten Matlab-opetusohjelmien vaikutus minäpystyvyyteen ja oppimistuloksiin yliopistomatematiikassa**

Kaarakka, T. E., Ali-Löytty, S. & Huhtanen, M., 2018, In : FMSEJA Journal . 2, 1, p. 67-77 11 p.  
Research output: Contribution to journal > Article > Scientific > peer-review

### **Matematiikan oppimisen tukeminen teknillisessä yliopistokoulutuksessa**

Pohjolainen, S., Rasila, A. & Kuosa, K., 2018, *Matematiikan opetus ja oppiminen*. Joutsenlahti, J., Silfverberg, H. & Räsänen, P. (eds.). Porvoo: Niilo Mäki Instituutti, p. 450-474 24 p.  
Research output: Chapter in Book/Report/Conference proceeding > Chapter > Professional

### **Mathematics Education in EU for STEM Disciplines**

Pohjolainen, S., 2018, *Modern Mathematics Education for Engineering Curricula in Europe: A Comparative Analysis of EU, Russia, Georgia and Armenia*. Pohjolainen, S., Myllykoski, T., Mercat, C. & Sosnovsky, S. (eds.). Birkhäuser, p. 1-6 6 p.  
Research output: Chapter in Book/Report/Conference proceeding > Chapter > Scientific

### **Modern Mathematics Education for Engineering Curricula in Europe: A Comparative Analysis of EU, Russia, Georgia and Armenia**

Pohjolainen, S. (ed.), Myllykoski, T. (ed.), Mercat, C. (ed.) & Sosnovsky, S. (ed.), 2018, Birkhäuser.  
Research output: Book/Report > Anthology > Scientific > peer-review

### **On the fine-grained complexity of rainbow coloring**

Kowalik, L., Lauri, J. & La, A. S., 2018, In : SIAM Journal on Discrete Mathematics. 32, 3, p. 1672-1705 34 p.

Research output: Contribution to journal › Article › Scientific › peer-review

### **Overview of the Results and Recommendations**

Pohjolainen, S., Sosnovsky, S. & Mercat, C., 2018, *Modern Mathematics Education for Engineering Curricula in Europe: A Comparative Analysis of EU, Russia, Georgia and Armenia*. Pohjolainen, S., Myllykoski, T., Mercat, C. & Sosnovsky, S. (eds.). Switzerland: Birkhäuser, p. 185-196 12 p.

Research output: Chapter in Book/Report/Conference proceeding › Chapter › Scientific

### **Projektityöskentelyn kehittäminen yläkoulun matematiikan opetuksessa**

Viro, I. E. & Joutsenlahti, J., 2018, In : *FMSERA Journal* . 2, 1, p. 90-99 10 p.

Research output: Contribution to journal › Article › Scientific › peer-review

### **Robust Regulation of Infinite-Dimensional Port-Hamiltonian Systems**

Humaloja, J-P. & Pauranen, L., 2018, In : *IEEE Transactions on Automatic Control*. 63, 5

Research output: Contribution to journal › Article › Scientific › peer-review

### **Wearable RFID perspiration sensor tags for well-being applications – From laboratory to field use**

Mulholland, K., Virkki, J., Raunonen, P. & Merilampi, S., 2018, *EMBECE and NBC 2017 - Joint Conference of the European Medical and Biological Engineering Conference EMBEC 2017 and the Nordic-Baltic Conference on Biomedical Engineering and Medical Physics, NBC 2017*. Springer Verlag, p. 1012-1015 4 p. (IFMBE Proceedings; vol. 65).

Research output: Chapter in Book/Report/Conference proceeding › Conference contribution › Scientific › peer-review

### **What's inside a rubble pile asteroid? DiSCUS - A tomographic twin radar Cubesat to find out**

Bambach, P., Deller, J., Martel, J., Vilenius, E., Goldberg, H., Sorsa, L-I., Pursiainen, S., Takala, M., Wurster, A., Braun, H. M., Lentz, H., Jutzi, M., Wittig, M., Chitu, C. C., Ritter, B. & Karatekin, O., 2018, *69th International Astronautical Congress, IAC 2018*. (Proceedings of the International Astronautical Congress, IAC).

Research output: Chapter in Book/Report/Conference proceeding › Conference contribution › Scientific › peer-review

### **Yliopistomatematiikan sähköisten tehtävien ja matemaattisen ajattelun kehittäminen**

Myllykoski, T. J., Mattila, P., Ali-Löytty, S., Kaarakka, T. & Viro, E., 2018, In : *FMSERA Journal* . 2, 1, p. 46-56 11 p.

Research output: Contribution to journal › Article › Scientific › peer-review

### **A Reduced-Order Two-Degree-of-Freedom Composite Nonlinear Feedback Control for a Rotary DC Servo Motor**

Pyrhönen, V-P., Koivisto, H. & Vilkkö, M., 12 Dec 2017, *Proceedings of the 56th IEEE Conference on Decision and Control*. Melbourne, Australia, p. 2065-2071 7 p.

Research output: Chapter in Book/Report/Conference proceeding › Conference contribution › Scientific › peer-review

### **Using GUHA Data Mining Method in Analyzing Road Traffic Accidents Occurred in the Years 2004–2008 in Finland**

Turunen, E., 27 Nov 2017, In : *Data Science and Engineering*. 2, 3, p. 224-231 8 p.

Research output: Contribution to journal › Article › Scientific › peer-review

### **Estimation of above-ground biomass of large tropical trees with terrestrial LiDAR**

Gonzalez de Tanago, J., Lau, A., Bartholomeus, H., Herold, M., Avitabile, V., Raunonen, P., Martius, C., Goodman, R., Disney, M., Manuri, S., Burt, A. & Calders, K., 13 Nov 2017, In : *Methods in Ecology and Evolution*. 12 p.

Research output: Contribution to journal › Article › Scientific › peer-review

### **Adaptive optics and lightcurve data of asteroids: Twenty shape models and information content analysis**

Viikinkoski, M., Hanuš, J., Kaasalainen, M., Marchis, F. & Āurech, J., 1 Nov 2017, In : *Astronomy and Astrophysics*. 607, A117.

Research output: Contribution to journal › Article › Scientific › peer-review

### **Opiskelijoiden oppimistyökalujen käyttö tietokoneavusteisessa Matematiikkajumppa -tukiopetuksessa**

Myllykoski, T., Ali-Löytty, S. S. & Pohjolainen, S., 31 Oct 2017, *2017: Proceedings of the annual FMSERA symposium 2016* . p. 54-65 12 p. (Proceedings of the FMSERA annual symposium).

Research output: Chapter in Book/Report/Conference proceeding › Conference contribution › Scientific › peer-review



### **Projektityöskentely matematiikan opiskelussa yläkoululaisten ja heidän opettajiensa kokemana**

Viro, E., Joutsenlahti, J. & Eriksson, S-L., 31 Oct 2017, *2017: Proceedings of the annual FMSERA symposium 2016*. (Proceedings of the FMSERA annual symposium).

Research output: Chapter in Book/Report/Conference proceeding › Conference contribution › Scientific › peer-review

### **Sähköisen matematiikan tentin toteuttaminen ja opiskelijoiden kokemukset sähköisestä tentistä**

Koskinen, S., Kela, J., Ali-Löytty, S. S. & Joutsenlahti, J., 31 Oct 2017, *2017: Proceedings of the annual FMSERA symposium 2016*. p. 110-120 11 p. (Proceedings of the FMSERA annual symposium).

Research output: Chapter in Book/Report/Conference proceeding › Conference contribution › Scientific › peer-review

### **Substanssiosaamisen integroinnin vaikutus asenteisiin ja motivaatioon yliopistomatematiikassa**

Tengvall, M., Kaarakka, T., Ali-Löytty, S. S. & Nokelainen, P., 31 Oct 2017, *2017: Proceedings of the annual FMSERA symposium 2016*. p. 76-87 12 p. (Proceedings of the FMSERA annual symposium).

Research output: Chapter in Book/Report/Conference proceeding › Conference contribution › Scientific › peer-review

### **FIB: Squeezing loop invariants by interpolation between forward/backward predicate transformers**

Lin, S-W., Sun, J., Xiao, H., Liu, Y., Sanán, D. & Hansen, H., Oct 2017, *Proceedings of the 32nd IEEE/ACM International Conference on Automated Software Engineering: ASE 2017*. Rosu, G., Di Penta, M. & Nguyen, T. N. (eds.). IEEE Press, p. 793-803 11 p. (IEEE/ACM International Conference on Automated Software Engineering).

Research output: Chapter in Book/Report/Conference proceeding › Conference contribution › Scientific › peer-review

### **Supporting an estimation of satellite locations**

Rautalin, S., Ali-Löytty, S., Piche, R. & Ala-Luhtala, J., 21 Sep 2017, IPC No. G01S19/40, Patent No. US20170269221, Priority date 15 Mar 2016

Research output: Patent › Scientific

### **Finite-dimensional regulators for a class of regular hyperbolic PDE systems**

Xu, X., Pohjolainen, S. & Dubljevic, S., 30 Aug 2017, In : *International Journal of Control*. p. 1-18 18 p.

Research output: Contribution to journal › Article › Scientific › peer-review

### **Semantic Labeling of User Location Context Based on Phone Usage Features**

Leppäkoski, H., Rivero-Rodriguez, A., Rautalin, S., Muñoz Martínez, D., Käppi, J., Ali-Löytty, S. & Piche, R., 24 Aug 2017, In : *Mobile Information Systems*. 2017, p. 1-21 21 p.

Research output: Contribution to journal › Article › Scientific › peer-review

### **3D shape of asteroid (6) Hebe from VLT/SPHERE imaging: Implications for the origin of ordinary H chondrites**

Marsset, M., Carry, B., Dumas, C., Hanuš, J., Viikinkoski, M., Vernazza, P., Müller, T. G., Delbo, M., Jehin, E., Gillon, M., Grice, J., Yang, B., Fusco, T., Berthier, J., Sonnett, S., Kugel, F., Caron, J. & Behrend, R., 1 Aug 2017, In : *Astronomy and Astrophysics*. 604, A64.

Research output: Contribution to journal › Article › Scientific › peer-review

### **How management intensity and neighborhood composition affect the structure of beech (*Fagus sylvatica* L.) trees**

Juchheim, J., Annighöfer, P., Ammer, C., Calders, K., Raunonen, P. & Seidel, D., 14 Jul 2017, In : *TREES-STRUCTURE AND FUNCTION*. 31, 5, p. 1723–1735 13 p.

Research output: Contribution to journal › Article › Scientific › peer-review

### **Order reduction for a signaling pathway model of neuronal synaptic plasticity**

Lehtimäki, M., Paunonen, L., Pohjolainen, S. & Linne, M-L., 1 Jul 2017, *20th IFAC World Congress*. IFAC, p. 7687-7692 6 p. (IFAC-PapersOnLine; vol. 50).

Research output: Chapter in Book/Report/Conference proceeding › Conference contribution › Scientific › peer-review

### **Robust Regulation of MIMO systems: A Reformulation of the Internal Model Principle**

Laakkonen, P., 1 Jul 2017, *20th IFAC World Congress*. IFAC, p. 693-697 5 p. (IFAC-PapersOnLine; vol. 50).

Research output: Chapter in Book/Report/Conference proceeding › Conference contribution › Scientific › peer-review

**Predicting Heat Propagation in Roebel-Cable Based Accelerator Magnet Prototype: One-Dimensional Approach with Coupled Turns**

Ruuskanen, J., Stenvall, A. & Lahtinen, V., Jun 2017, In : IEEE Transactions on Applied Superconductivity. 27, 4  
Research output: Contribution to journal > Article > Scientific > peer-review

**The effect of hardware-computed travel time on localization accuracy in the inversion of experimental (acoustic) waveform data**

Takala, M., Hämäläinen, T. & Pursiainen, S., Jun 2017, In : IEEE Transactions on Computational Imaging. 3, 2, p. 344-354  
11 p.

Research output: Contribution to journal > Article > Scientific > peer-review

**A fractional representation approach to the robust regulation problem for SISO systems**

Laakkonen, P. & Quadrat, A., 1 May 2017, In : Systems and Control Letters. 103, p. 32-37 6 p.

Research output: Contribution to journal > Article > Scientific > peer-review

**Asymptotic behaviour in the robot rendezvous problem**

Paunonen, L. & Seifert, D., 1 May 2017, In : Automatica. 79, p. 127-130 4 p.

Research output: Contribution to journal > Article > Scientific > peer-review

**Volumes and bulk densities of forty asteroids from ADAM shape modeling**

Hanuš, J., Viikinkoski, M., Marchis, F., Durech, J., Kaasalainen, M., Delbo, M., Herald, D., Frappa, E., Hayamizu, T., Kerr, S., Preston, S., Timerson, B., Dunham, D. & Talbot, J., 1 May 2017, In : Astronomy and Astrophysics. 601, A114.

Research output: Contribution to journal > Article > Scientific > peer-review

**Output Regulation of Infinite-Dimensional Time-Delay Systems**

Paunonen, L., May 2017, *American Control Conference (ACC), 2017*. IEEE, p. 3189-3193 5 p. (Proceedings of the American Control Conference; vol. 2017).

Research output: Chapter in Book/Report/Conference proceeding > Conference contribution > Scientific > peer-review

**The logics taught and used at high schools are not the same**

Valmari, A. & Hella, L., May 2017, *Proceedings of the Fourth Russian Finnish Symposium on Discrete Mathematics*.

Karhumäki, J., Matiyasevich, Y. & Saarela, A. (eds.). Turku: TURKU CENTRE FOR COMPUTER SCIENCE, p. 172-186  
15 p. (TUCS Lecture Notes; no. 26).

Research output: Chapter in Book/Report/Conference proceeding > Conference contribution > Scientific > peer-review

**A Mixed Finite Element Method to Solve the EEG Forward Problem**

Vorwerk, J., Engwer, C., Pursiainen, S. & Wolters, C. H., 1 Apr 2017, In : IEEE Transactions on Medical Imaging. 36, 4, p. 930-941 12 p., 7731161.

Research output: Contribution to journal > Article > Scientific > peer-review

**Comparison of wood volume estimates of young trees from terrestrial laser scan data**

Kunz, M., Hess, C., Raunonen, P., Bienert, A., Hackenberg, J., Maas, H. G., Härdtle, W., Fichtner, A. & Von Oheimb, G., 1 Apr 2017, In : iForest - Biogeosciences and Forestry. 10, 2, p. 451-458 8 p.

Research output: Contribution to journal > Article > Scientific > peer-review

**Meeting a deadline: shortest paths on stochastic directed acyclic graphs with information gathering**

Lauri, M., Ropponen, A. & Ritala, R., Apr 2017, In : Annals of Mathematics and Artificial Intelligence. 79, 4, p. 337-370 34 p.

Research output: Contribution to journal > Article > Scientific > peer-review

**Automatic tree species recognition with quantitative structure models**

Åkerblom, M., Raunonen, P., Mäkipää, R. & Kaasalainen, M., 15 Mar 2017, In : Remote Sensing of Environment. 191, p. 1-12 12 p.

Research output: Contribution to journal > Article > Scientific > peer-review

### **Complexity of Rainbow Vertex Connectivity Problems for Restricted Graph Classes**

Lauri, J., 11 Mar 2017, In : *Discrete Applied Mathematics*. 219, p. 132-146 14 p.

Research output: Contribution to journal › Article › Scientific › peer-review

### **Shape model of asteroid (130) Elektra from optical photometry and disk-resolved images from VLT/SPHERE and NIRC2/Keck**

Hanuš, J., Marchis, F., Viikinkoski, M., Yang, B. & Kaasalainen, M., 1 Mar 2017, In : *Astronomy and Astrophysics*. 599, A36.

Research output: Contribution to journal › Article › Scientific › peer-review

### **Forward and Inverse Effects of the Complete Electrode Model in Neonatal EEG**

Pursiainen, S., Lew, S. & Wolters, C. H., Mar 2017, In : *Journal of Neurophysiology*. 117, 3, p. 876-884

Research output: Contribution to journal › Article › Scientific › peer-review

### **The Congruences Below Fair Testing with Initial Stability**

Valmari, A., 6 Feb 2017, *2016 16th International Conference on Application of Concurrency to System Design*. IEEE, p. 25-34 10 p.

Research output: Chapter in Book/Report/Conference proceeding › Conference contribution › Scientific › peer-review

### **Abstractions for transition systems with applications to stubborn sets**

Hansen, H., 1 Jan 2017, *Concurrency, Security, and Puzzles: Essays Dedicated to Andrew William Roscoe on the Occasion of His 60th Birthday*. Gibson-Robinson, T., Hopcroft, P. & Lazić, R. (eds.). Springer International Publishing, p. 104-123 20 p. (Lecture Notes in Computer Science; vol. 10160).

Research output: Chapter in Book/Report/Conference proceeding › Chapter › Scientific

### **More stubborn set methods for process algebras**

Valmari, A., 1 Jan 2017, *Concurrency, Security, and Puzzles: Essays Dedicated to Andrew William Roscoe on the Occasion of His 60th Birthday*. Gibson-Robinson, T., Hopcroft, P. & Lazić, R. (eds.). Springer International Publishing, p. 246-271 26 p. (Lecture Notes in Computer Science; vol. 10160).

Research output: Chapter in Book/Report/Conference proceeding › Chapter › Scientific

### **Stop it, and be stubborn!**

Valmari, A., 1 Jan 2017, In : *ACM Transactions on Embedded Computing Systems*. 16, 2, 46.

Research output: Contribution to journal › Article › Scientific › peer-review

### **Advanced boundary electrode modeling for tES and parallel tES/EEG**

Pursiainen, S., Agsten, B., Wagner, S. & Wolters, C. H., 2017, In : *IEEE Transactions on Neural Systems and Rehabilitation Engineering*. 26, 1, p. 37-44

Research output: Contribution to journal › Article › Scientific › peer-review

### **Asymptotics for infinite systems of differential equations**

Paunonen, L. & Seifert, D., 2017, In : *SIAM Journal on Control and Optimization*. 55, 2, p. 1153-1178 26 p.

Research output: Contribution to journal › Article › Scientific › peer-review

### **Bayes Forest: A data-intensive generator of morphological tree clones**

Potapov, I., Järvenpää, M., Åkerblom, M., Raunonen, P. & Kaasalainen, M., 2017, In : *GigaScience*. 6, 10, gix079.

Research output: Contribution to journal › Article › Scientific › peer-review

### **Computational Model for Simulating Multifocal Imaging in Optical Projection Tomography**

Koskela, O., Belay, B., Pursiainen, S., Figueiras, E. & Hyttinen, J., 2017, *Mathematics in Imaging 2017*. Optical Society of America, 3 p. MTu1C.3

Research output: Chapter in Book/Report/Conference proceeding › Conference contribution › Scientific › peer-review

### **Context Awareness for Semantic Mobile Computing**

Rivero-Rodriguez, A. & Nykänen, O., 2017, *Multi-Technology Positioning*. Nurmi, J., Lohan, E-S., Wymeersch, H., Seco-Granados, G. & Nykänen, O. (eds.). Cham: Springer International Publishing, p. 251-267 17 p.

Research output: Chapter in Book/Report/Conference proceeding > Chapter > Scientific > peer-review

### **General Integral Formulas for k-hyper-mono-genic Functions**

Eriksson, S-L. & Orelma, H., 2017, In : *Advances in Applied Clifford Algebras*. 27, 1, p. 99-110 12 p.

Research output: Contribution to journal > Article > Scientific > peer-review

### **Independent Loops Search in Flow Networks Aiming for Well-Conditioned System of Equations**

Humaloja, J-P., Ali-Löytty, S., Pohjolainen, S. & Hämäläinen, T., 2017, *Progress in Industrial Mathematics at ECMI 2016*. Quintela, P., Barral, P., Gómez, D., Pena, F. J., Rodríguez, J., Salgado, P. & Vázquez-Mendéz, M. E. (eds.). Springer International Publishing, (Mathematics in industry; vol. 26).

Research output: Chapter in Book/Report/Conference proceeding > Conference contribution > Scientific > peer-review

### **Integral kernels for k-hypermonogenic functions**

Vuojamo, V. & Eriksson, S-L., 2017, In : *Complex Variables and Elliptic Equations*. 62, 9, p. 1-12 12 p.

Research output: Contribution to journal > Article > Scientific > peer-review

### **Kriging prediction of stand-level forest information using mobile laser scanning data adjusted for nondetection**

Saarela, S., Breidenbach, J., Raunonen, P., Grafström, A., Ståhl, G., Ducey, M. J. & Astrup, R., 2017, In : *CANADIAN JOURNAL OF FOREST RESEARCH-REVUE CANADIENNE DE RECHERCHE FORESTIERE*. 47, 9, p. 1257-1265 9 p.

Research output: Contribution to journal > Article > Scientific > peer-review

### **Kullback-Leibler Divergence Approach to Partitioned Update Kalman Filter**

Raitoharju, M., García-Fernández, Á. & Piche, R., 2017, In : *Signal Processing*. 130

Research output: Contribution to journal > Article > Scientific > peer-review

### **LEADER: fast estimates of asteroid shape elongation and spin latitude distributions from scarce photometry**

Nortunen, H. & Kaasalainen, M., 2017, In : *Astronomy and Astrophysics*. 608, A91.

Research output: Contribution to journal > Article > Scientific > peer-review

### **Matematiikan Perustaitojen Testi: Testin tehtävien ja vuosien 2010-2016 tulosten analyysi**

Myllykoski, T. & Ali-Löytty, S. S., 2017, (In preparation).

Research output: Working paper > Professional

### **Maximal perpendicularity in certain Abelian groups**

Mattila, M., Merikoski, J. K., Haukkanen, P. & Tossavainen, T., 2017, In : *ACTA UNIVERSITATIS SAPIENTIAE: MATHEMATICA*. 9, 1, p. 235-247 13 p.

Research output: Contribution to journal > Article > Scientific > peer-review

### **Minimal solutions of general fuzzy relation equations on linear carriers. An algebraic characterization**

Diaz-Moreno, J. C., Medina, J. & Turunen, E., 2017, In : *Fuzzy Sets and Systems*. 311, p. 112-123

Research output: Contribution to journal > Article > Scientific > peer-review

### **Modelling anisotropy in non-oriented electrical steel sheet using vector Jiles-Atherton model**

Upadhaya, B., Martin, F., Rasilo, P., Handgruber, P., Belahcen, A. & Arkkio, A., 2017, In : *COMPEL: The International Journal for Computation and Mathematics in Electrical and Electronic Engineering*. 36, 3, p. 764-773

Research output: Contribution to journal > Article > Scientific > peer-review

### **NP-completeness results for partitioning a graph into total dominating sets**

Koivisto, M., Laakkonen, P. & Lauri, J., 2017, *Computing and Combinatorics - 23rd International Conference, COCOON 2017, Proceedings*. Springer Verlag, p. 333-345 13 p. (Lecture Notes in Computer Science; vol. 10392).

Research output: Chapter in Book/Report/Conference proceeding > Conference contribution > Scientific > peer-review

### **On homomorphisms between products of median algebras**

Couceiro, M., Foldes, S. & Meletiou, G. C., 2017, In : *Algebra Universalis*. 78, 4, p. 545–553 9 p.  
Research output: Contribution to journal › Article › Scientific › peer-review

### **Positive definite arithmetical functions**

Mattila, M., 2017.

Research output: Other conference contribution › Paper, poster or abstract › Scientific

### **Robust controllers for regular linear systems with infinite-dimensional exosystems**

Paunonen, L., 2017, In : *SIAM Journal on Control and Optimization*. 55, 3, p. 1567-1597 31 p.

Research output: Contribution to journal › Article › Scientific › peer-review

### **Some Theoretical Remarks of Octonionic Analysis**

Kauhanen, J. & Orelma, H., 2017, *Proceedings of the 8th International Conference On Mathematical Modeling (ICMM-2017)*. Egorov, I. E., Popov, S. V., Vabishchevich, P. N., Antonov, M. Y., Lazarev, N. P., Troeva, M. S., Ivanova, A. O. & Grigor'ev, Y. M. (eds.). American Institute of Physics AIP, Vol. 1907. 030056. (AIP Conference Proceedings).

Research output: Chapter in Book/Report/Conference proceeding › Conference contribution › Scientific › peer-review

### **Structure-preserving mesh coupling based on the Buffa-Christiansen complex**

Niemimäki, O., Kurz, S. & Kettunen, L., 2017, In : *Mathematics of Computation*. 86, p. 507-524

Research output: Contribution to journal › Article › Scientific › peer-review

### **Stubborn set intuition explained**

Valmari, A. & Hansen, H., 2017, *Transactions on Petri Nets and Other Models of Concurrency XII*. Springer Verlag, p. 140-165 26 p. (Lecture Notes in Computer Science; vol. 10470).

Research output: Chapter in Book/Report/Conference proceeding › Conference contribution › Scientific › peer-review

### **Teollinen internet ja semanttinen mallinnus**

Nykänen, O., 2017, *Teollinen internet uudistaa palveluliiketoimintaa ja kunnossapitoa*. Martinsuo, M. & Kärri, T. (eds.). Kerava: Kunnossapitoyhdistys ProMaint, p. 102-123 22 p.

Research output: Chapter in Book/Report/Conference proceeding › Chapter › Scientific › peer-review

### **The arithmetic Jacobian matrix and determinant**

Haukkanen, P., Merikoski, J. K., Mattila, M. & Tossavainen, T., 2017, In : *Journal of Integer Sequences*. 20, 9, 17.9.2.

Research output: Contribution to journal › Article › Scientific › peer-review

### **Two-Sided Hypergenic Functions**

Eriksson, S-L., Orelma, H. & Vieira, N., 2017, In : *Advances in Applied Clifford Algebras*. 27, 1, p. 111–123 14 p.

Research output: Contribution to journal › Article › Scientific › peer-review

### **RS-BL-algebras are MV-algebras**

Turunen, E., 1 Dec 2016, In : *Iranian Journal of Fuzzy Systems*. 13, 6, p. 153-154 2 p.

Research output: Contribution to journal › Article › Scientific › peer-review

### **Distribution of spin-axes longitudes and shape elongations of main-belt asteroids**

Cibulkova, H., Durech, J., Vokrouhlicky, D., Kaasalainen, M. & Oszkiewicz, D. A., Dec 2016, In : *Astronomy and Astrophysics*. 596, 10 p., A57.

Research output: Contribution to journal › Article › Scientific › peer-review

### **A New Cauchy Type Integral Formula for Quaternionic k-hypermonogenic Functions**

Eriksson, S-L. & Orelma, H., 23 Nov 2016, *Modern Trends in Hypercomplex Analysis*. Bernstein, S., Kähler, U., Sabadini, I. & Sommen, F. (eds.). Springer International Publishing, p. 175-189 15 p. (Trends in Mathematics).

Research output: Chapter in Book/Report/Conference proceeding › Conference contribution › Scientific › peer-review

### **Electroencephalography (EEG) forward modeling via H(div) finite element sources with focal interpolation**

Pursiainen, S., Vorwerk, J. & Wolters, C. H., 15 Nov 2016, In : *Physics in Medicine and Biology*. 61, 24, p. 8502-8520 19 p.

Research output: Contribution to journal › Article › Scientific › peer-review

### **Chasing the Rainbow Connection: Hardness, Algorithms, and Bounds**

Lauri, J., 3 Nov 2016, Tampere University of Technology. 67 p. (Tampere University of Technology. Publication; vol. 1428)

Research output: Book/Report › Doctoral thesis › Collection of Articles

### **Projektipankki yläkoulun matematiikkaan**

Viro, E., 26 Oct 2016, In : *Dimensio*. 2016, 5, p. 29-30 2 p.

Research output: Contribution to journal › Article › Professional

### **Identifying weak ties from publicly available social media data in an event**

Gupta, J. P., Menon, K., Kärkkäinen, H., Huhtamäki, J., Mukkamala, R. R., Hussain, A., Vatrappu, R., Jussila, J. & Pirkkalainen, H., 17 Oct 2016, *AcademicMindtrek '16 Proceedings of the 20th International Academic Mindtrek Conference*. ACM, p. 11-19 9 p.

Research output: Chapter in Book/Report/Conference proceeding › Conference contribution › Scientific › peer-review

### **Resurssitehokkaampi ja ilmastoneutraalimpi energiajärjestelmä, mutta miten? Suomalaiset avaintoimijat vastaavat**

Lehtonen, P., Toivanen, P., Aalto, P., Björkqvist, T., Hakkarainen, M., Harsia, P., Holttinen, H., Järventausta, P., Jaakkola, I., Kallioharju, K., Kojo, M., Mylläri, F. & Oksa, A. M., 11 Oct 2016, *EL-TRAN Analyysi*. 11 p.

Research output: Book/Report › Commissioned report › Professional

### **Students' Use of Learning Tools and Tool Types: Solving Self-Study Assignments on an Online Platform**

Myllykoski, T., Pohjolainen, S. & Ali-Löytty, S., 16 Sep 2016, *SEFI 2016 Annual Conference Proceedings: Engineering Education on Top of the World: Industry University Cooperation*. European Society for Engineering Education SEFI

Research output: Chapter in Book/Report/Conference proceeding › Conference contribution › Scientific › peer-review

### **Developing Learning and Teaching in Engineering Mathematics with and without Technology**

Joutsenlahti, J., Ali-Löytty, S. & Pohjolainen, S., 15 Sep 2016, *SEFI 2016 Annual Conference Proceedings: Engineering Education on Top of the World: Industry University Cooperation*. European Society for Engineering Education SEFI

Research output: Chapter in Book/Report/Conference proceeding › Conference contribution › Scientific › peer-review

### **Application and theory of Petri nets and other models of concurrency: Special issue of selected papers from Petri Nets 2015**

Devillers, R., Valmari, A. & Penczek, W., 13 Sep 2016, In : *Fundamenta Informaticae*. 146, 1, p. v-vi

Research output: Contribution to journal › Editorial › Scientific

### **Interval decomposition lattices are balanced**

Foldes, S. & Radeleczki, S., 1 Sep 2016, In : *DEMONSTRATIO MATHEMATICA*. 49, 3, p. 271-281 11 p.

Research output: Contribution to journal › Article › Scientific › peer-review

### **MathCheck: a tool for checking math solutions in detail**

Valmari, A. & Kaarakka, T., Sep 2016, *SEFI 2016 Annual Conference Proceedings: Engineering Education on Top of the World: Industry University Cooperation*. European Society for Engineering Education SEFI

Research output: Chapter in Book/Report/Conference proceeding › Conference contribution › Scientific › peer-review

### **Optimal energy decay in a one-dimensional coupled wave-heat system**

Batty, C., Paunonen, L. & Seifert, D., Sep 2016, In : *Journal of Evolution Equations*. 16, 3, p. 649-664 16 p.

Research output: Contribution to journal › Article › Scientific › peer-review

### **Safety Property-Driven Stubborn Sets**

Hansen, H. & Valmari, A., Sep 2016, *Reachability Problems: 10th International Workshop, RP 2016, Aalborg, Denmark, September 19-21, 2016, Proceedings*. Larsen, K., Potapov, I. & Srba, J. (eds.). Springer International Publishing, p. 90-103 14 p. (Lecture notes in computer science; vol. 9899).

Research output: Chapter in Book/Report/Conference proceeding › Conference contribution › Scientific › peer-review

### **Mathematical Modelling**

Heiliö, M., Lähivaara, T., Laitinen, E., Mantere, T., Merikoski, J., Pohjolainen, S., Raivio, K., Silvennoinen, R., Suutala, A., Tarvainen, T., Tiihonen, T., Tuomela, J., Turunen, E. & Vauhkonen, M., 31 Jul 2016, Switzerland: Springer International Publishing. 242 p.

Research output: Book/Report › Anthology › Scientific › peer-review

### **Experienced risks in social media use – longitudinal study among university students**

Jussila, J. & Aramo-Immonen, H., 4 Jul 2016, *EDULEARN16 Proceedings: 8th annual International Conference on Education and New Learning Technologies, Barcelona (Spain). 4th - 6th of July, 2016.* . Gómez Chova, L., López Martínez, A. & Candel Torres, I. (eds.). IATED Academy, Vol. 8. p. 1255-1260 6 p. (EDULEARN Proceedings).

Research output: Chapter in Book/Report/Conference proceeding › Conference contribution › Scientific › peer-review

### **Asymptotic Behaviour of Platoon Systems**

Paunonen, L. & Seifert, D., Jul 2016, *Proceedings of the 22nd International Symposium on Mathematical Theory of Networks and Systems.* University of Minnesota, p. 830-836 7 p.

Research output: Chapter in Book/Report/Conference proceeding › Conference contribution › Scientific › peer-review

### **Acoustic Modelling**

Pohjolainen, S. & Suutala, A., 30 Jun 2016, *Mathematical Modelling.* Pohjolainen, S. (ed.). Switzerland: Springer, p. 185-205 21 p.

Research output: Chapter in Book/Report/Conference proceeding › Chapter › Scientific › peer-review

### **The Structure of Robust Controllers for Distributed Parameter Systems**

Hämäläinen, T. & Pohjolainen, S., 29 Jun 2016, *Proceedings of the European Control Conference, June 29 - July 1, 2016, Aalborg Denmark.* Aalborg, Denmark: IEEE, 6 p.

Research output: Chapter in Book/Report/Conference proceeding › Conference contribution › Scientific › peer-review

### **Partitioned Update Kalman Filter**

Raitoharju, M., Piché, R., Ala-Luhtala, J. & Ali-Löyty, S., Jun 2016, In : *Journal of Advances in Information Fusion.* 11, 1, p. 3-14 12 p.

Research output: Contribution to journal › Article › Scientific › peer-review

### **Two Consistent Many-Valued Logics for Paraconsistent Phenomena**

Turunen, E. & Rodrigues, J. T., 9 Mar 2016, *New Directions in Paraconsistent Logic : 5th WCP, Kolkata, India, February 2014.* Beziau, J.-Y., Chakraborty, M. & Dutta, S. (eds.). New Delhi Heidelberg New York Dordrecht London: Springer Verlag, p. 185-210 25 p. (Springer Proceedings in Mathematics & Statistics; vol. 152).

Research output: Chapter in Book/Report/Conference proceeding › Chapter › Scientific › peer-review

### **Constructing Minimal Coverability Sets**

Piipponen, A. & Valmari, A., 4 Mar 2016, In : *Fundamenta Informaticae.* 143, 3-4, p. 393-414 22 p.

Research output: Contribution to journal › Article › Scientific › peer-review

### **On the Complexity of Rainbow Coloring Problems**

Eiben, E., Galian, R. & Lauri, J., 20 Feb 2016, *Combinatorial Algorithms: 26th International Workshop, IWOCA 2015, Verona, Italy, October 5-7, 2015, Revised Selected Papers.* Lipták, Z. & Smyth, W. F. (eds.). Springer International Publishing, p. 209-220 12 p. (Lecture Notes in Computer Science; vol. 9538).

Research output: Chapter in Book/Report/Conference proceeding › Conference contribution › Scientific › peer-review

### **Projekteja yläkoulun matematiikkaan**

Eriksson, S.-L., Salminen, J. & Viro, E., 15 Feb 2016, In : *LUMA-sanomat.*

Research output: Contribution to journal › Article › Professional

### **On the Underlying Mathematical and Quantum Structure of Quantum Cryptography**

Gotkhindikar, A. D., Feb 2016, In : *International Journal of Engineering and Computer Science.* 5, 2, p. 15685-15699

Research output: Contribution to journal › Article › Scientific › peer-review

### **Opetusteknologiaa hyödyntävä oppimisympäristö MATLABin alkeiden opiskeluun**

Ali-Löytty, S., Parviainen, P. & Pohjolainen, S., 8 Jan 2016, p. 42-43. 2 p.

Research output: Other conference contribution › Paper, poster or abstract › Scientific

### **Shape reconstruction from generalized projections**

Viikinkoski, M., 8 Jan 2016, Tampere University of Technology. 53 p. (Tampere University of Technology. Publication; vol. 1358)

Research output: Book/Report › Doctoral thesis › Collection of Articles

### **Studying the various properties of MIN and MAX matrices - elementary vs. more advanced methods**

Mattila, M. & Haukkanen, P., Jan 2016, In : Special Matrices. 4, 1, p. 101-109 9 p.

Research output: Contribution to journal › Article › Scientific › peer-review

### **A Simple Controller with a Reduced Order Internal Model in the Frequency Domain**

Laakkonen, A. & Paunonen, L., 2016, *Proceedings of European Control Conference 2016*. IEEE, p. 1988-1992 5 p.

Research output: Chapter in Book/Report/Conference proceeding › Conference contribution › Scientific › peer-review

### **Asteroid models from photometry and complementary data sources**

Kaasalainen, M., 2016, *Graduate School In Astronomy: Xvi Special Courses At The National Observatory Of Rio De Janeiro: Xvi Cce*. Chavero, C., Cunha, K., Carvano, J., Fernandes, MB. & Dupke, R. (eds.). AMER INST PHYSICS, 26 p. (AIP Conference Proceedings; vol. 1732).

Research output: Chapter in Book/Report/Conference proceeding › Conference contribution › Scientific › peer-review

### **Controller Design for Robust Output Regulation of Regular Linear Systems**

Paunonen, L., 2016, In : IEEE Transactions on Automatic Control. 61, 10, p. 2974-2986

Research output: Contribution to journal › Article › Scientific › peer-review

### **Data-based stochastic modeling of tree growth and structure formation**

Potapov, I., Järvenpää, M., Åkerblom, M., Raunonen, P. & Kaasalainen, M., 2016, In : Silva Fennica. 50, 1, 1413.

Research output: Contribution to journal › Article › Scientific › peer-review

### **Further hardness results on rainbow and strong rainbow connectivity**

Lauri, J., 2016, In : Discrete Applied Mathematics. 201, p. 191-200

Research output: Contribution to journal › Article › Scientific › peer-review

### **Fuzzy Logic of Quasi-Truth: An Algebraic Treatment**

Di Nola, A., Grigolia, R. & Turunen, E., 2016, Switzerland: Springer. 116 p. (Studies in Fuzziness and Soft Computing; vol. 338)

Research output: Book/Report › Book › Scientific › peer-review

### **Integer Models**

Silvennoinen, R. & Merikoski, J., 2016, *Mathematical Modelling*. Pohjolainen, S. (ed.). Springer International Publishing, p. 35-54 20 p.

Research output: Chapter in Book/Report/Conference proceeding › Chapter › Scientific › peer-review

### **Mobile Context-Aware Systems: Technologies, Resources and Applications**

Rivero-Rodriguez, A., Pileggi, P. & Nykänen, O. A., 2016, In : International Journal of Interactive Mobile Technologies. 10, 2, p. 25-32 8 p.

Research output: Contribution to journal › Article › Scientific › peer-review

### **Moodlen työpaja: Vertaisarviointi osana opetusta yliopistomatematiikan ensimmäisellä peruskurssilla**

Mäkelä, A.-M., Ali-Löytty, S., Joutsenlahti, J. & Kauhanen, J., 2016, *Matematiikan ja luonnontieteiden opetuksen tutkimusseuran tutkimuspäivät 2015*. Silfvenberg, H. & Hästö, P. (eds.). Matematiikan ja luonnontieteiden opetuksen tutkimusseura r.y., p. 90-99 10 p.



Research output: Chapter in Book/Report/Conference proceeding › Conference contribution › Scientific › peer-review

### **On Detecting the Shape of an Unknown Object in an Electric Field**

Humaloja, J-P., Hämäläinen, T. & Pohjolainen, S., 2016, *Progress in Industrial Mathematics at ECMI 2014*. Russo, G., Capasso, V., Nicosia, G. & Romano, V. (eds.). Springer International Publishing, (Mathematics in Industry; vol. 22).

Research output: Chapter in Book/Report/Conference proceeding › Conference contribution › Scientific › peer-review

### **On finding rainbow and colorful paths**

Kowalik, Ł. & Lauri, J., 2016, In : *Theoretical Computer Science*. 628, p. 110-114 5 p.

Research output: Contribution to journal › Article › Scientific › peer-review

### **On k-Hypermonogenic Functions and Their Mean Value Properties**

Eriksson, S-L. & Orelma, H., 2016, In : *Complex Analysis and Operator Theory*. 10, 2, p. 311-325 15 p.

Research output: Contribution to journal › Article › Scientific › peer-review

### **Online tests of Kalman filter consistency**

Piché, R., 2016, In : *International Journal of Adaptive Control and Signal Processing*. 30, 1, p. 115–124

Research output: Contribution to journal › Article › Scientific › peer-review

### **On the arity gap of finite functions: Results and applications**

Couceiro, M. & Lehtonen, E., 2016, In : *Journal of Multiple-Valued Logic and Soft Computing*. 27, 2-3, p. 193-207 15 p.

Research output: Contribution to journal › Review Article › Scientific › peer-review

### **On the Fine-Grained Complexity of Rainbow Coloring**

Kowalik, L., Lauri, J. & Socala, A., 2016, *24th Annual European Symposium on Algorithms (ESA 2016)*. Sankowski, P. & Zaroliagis, C. (eds.). Vol. 57. (Leibniz International Proceedings in Informatics (LIPIcs); vol. 57).

Research output: Chapter in Book/Report/Conference proceeding › Conference contribution › Scientific › peer-review

### **Orbiter-to-orbiter tomography: a potential approach for small solar system bodies**

Pursiainen, S. & Kaasalainen, M., 2016, In : *IEEE Transactions on Aerospace and Electronic Systems*. 52, 6, p. 2747-2759

Research output: Contribution to journal › Article › Scientific › peer-review

### **Poincaré inverse problem and torus construction in phase space**

Laakso, T. & Kaasalainen, M., 2016, In : *Physica D: Nonlinear Phenomena*. 315, p. 72-82

Research output: Contribution to journal › Article › Scientific › peer-review

### **Probabilistic assessment of the influence of lake properties in long-term radiation doses to humans**

Pohjola, J., Turunen, J., Lipping, T. & Ikonen, A. T. K., 2016, In : *JOURNAL OF ENVIRONMENTAL RADIOACTIVITY*. 164, p. 258–267

Research output: Contribution to journal › Article › Scientific › peer-review

### **Radar observations and shape model of asteroid 16 Psyche**

Shepard, M. K., Richardson, J., Taylor, P. A., Rodriguez-Ford, L. A., Conrad, A., de Pater, I., Adamkovics, M., de Kleer, K., Males, J. R., Morzinski, K. M., Close, L. M., Kaasalainen, M., Viikinkoski, M., Timerson, B., Reddy, V., Magri, C., Nolan, M. C., Howell, E. S., Benner, L. A. M., Giorgini, J. D., Warner, B. D. & Harris, A. W., 2016, In : *Icarus*. 281, p. 388-403 16 p.

Research output: Contribution to journal › Article › Scientific › peer-review

### **Risk-averse path planning with observation options**

Ropponen, A., Lauri, M. & Ritala, R., 2016, *Proceedings of the 4th ICAPS Workshop on Planning and Robotics*. Finzi, A. & Karpas, E. (eds.). p. 25-36 12 p. (Workshop on Planning and Robotics).

Research output: Chapter in Book/Report/Conference proceeding › Conference contribution › Professional

### **Robust Regulation for First-Order Port-Hamiltonian Systems**

Humaloja, J-P., Paunonen, L. & Pohjolainen, S., 2016, *Proceedings of the 15th European Control Conference, Aalborg, Denmark, June 29th - July 1st, 2016*. IEEE, 6 p.

Research output: Chapter in Book/Report/Conference proceeding > Conference contribution > Scientific > peer-review

### **Robust Regulation for Port-Hamiltonian Systems of Even Order**

Humaloja, J-P., Paunonen, L. & Pohjolainen, S., 2016, *Proceedings of the 22nd International Symposium on Mathematical Theory of Networks and Systems, Minneapolis, MN, USA, July 12-15, 2016*. University of Minnesota, p. 152-156 5 p.

Research output: Chapter in Book/Report/Conference proceeding > Conference contribution > Scientific > peer-review

### **Sähkömagneettinen malli funktoreina ja luonnollisina muunnoksina**

Kovanen, T., Tarhasaari, T. & Kettunen, L., 2016, In : *Arkhimedes*. p. 21-30 10 p.

Research output: Contribution to journal > Article > Professional

### **Soft Computing Methods**

Turunen, E., Raivio, K. & Mantere, T., 2016, *Mathematical Modelling*. Pohjolainen, S. (ed.). Springer International Publishing, p. 79-112 34 p.

Research output: Chapter in Book/Report/Conference proceeding > Chapter > Scientific > peer-review

### **Spectral density function of the Doob transformation of fractional Brownian motion (i.e. the fractional Ornstein-Uhlenbeck process)**

Kaarakka, T., 2016, p. 30-31. 2 p.

Research output: Other conference contribution > Paper, poster or abstract > Scientific

### **Stubborn Set Intuition Explained**

Valmari, A. & Hansen, H., 2016, *Petri Nets and Software Engineering 2016: Proceedings of the International Workshop on Petri Nets and Software Engineering 2016, including the International Workshop on Biological Processes & Petri Nets 2016*. Cabac, L., Kristensen, L. M. & Röлке, H. (eds.). CEUR-WS, p. 213-232 20 p. (CEUR Workshop Proceedings; vol. 1591).

Research output: Chapter in Book/Report/Conference proceeding > Conference contribution > Scientific > peer-review

### **Towards a unified framework for decomposability of processes**

Lahtinen, V. & Stenvall, A., 2016, In : *SYNTHESE*. 194, 11, p. 4411-4427

Research output: Contribution to journal > Article > Scientific > peer-review

### **Editorial: is Game-Based Math Learning Finally Coming of Age?**

Kiili, K., Devlin, K. & Multisilta, J., 8 Dec 2015, In : *International Journal of Serious Games*. 2, 4, 4 p., 1.

Research output: Contribution to journal > Editorial > Scientific

### **Binomial Gaussian mixture filter**

Raitoharju, M., Ali-Löytty, S. & Piché, R., 2 Dec 2015, In : *Eurasip Journal on Advances in Signal Processing*. 2015, 1, 36.

Research output: Contribution to journal > Article > Scientific > peer-review

### **Graph-Based Map Matching for Indoor Positioning**

Koivisto, M., Nurminen, H., Ali-Löytty, S. & Piche, R., 1 Dec 2015, *10th International Conference on Information, Communications and Signal Processing (ICICS)*. IEEE, 5 p.

Research output: Chapter in Book/Report/Conference proceeding > Conference contribution > Scientific > peer-review

### **Kalman filter with a linear state model for PDR+WLAN positioning and its application to assisting a particle filter**

Raitoharju, M., Nurminen, H. & Piché, R., 1 Dec 2015, In : *Eurasip Journal on Advances in Signal Processing*. 2015, 1, 33.

Research output: Contribution to journal > Article > Scientific > peer-review

### **SimpleTree: An Efficient Open Source Tool to Build Tree Models from TLS Clouds**

Hackenberg, J., Spiecker, H., Calders, K., Disney, M. & Raunonen, P., 23 Nov 2015, In : *Forests: Open Access Journal*. 6, 11, p. 4245-4294 50 p.

Research output: Contribution to journal > Article > Scientific > peer-review

### **Fractional Ornstein-Uhlenbeck Processes**

Kaarakka, T., 6 Nov 2015, Tampere University of Technology. 102 p. (Tampere University of Technology. Publication; vol. 1338)

Research output: Book/Report > Doctoral thesis > Monograph

### **Comparison Study for Whitney (Raviart-Thomas) Type Source Models in Finite Element Method Based EEG Forward Modeling**

Pursiainen, S., Bauer, M., Vorwerk, J., Köstler, H. & Wolters, C. H., Nov 2015, In : IEEE Transactions on Biomedical Engineering. 62, 11, p. 2648-2656 9 p.

Research output: Contribution to journal > Article > Scientific > peer-review

### **Moodlen työpaja: Vertaisarviointi osana opetusta matematiikan ensimmäisellä peruskurssilla**

Mäkelä, A.-M., Ali-Löytty, S. S., Kauhanen, J. P. & Joutsenlahti, J., 30 Oct 2015, p. 15-15. 1 p.

Research output: Other conference contribution > Paper, poster or abstract > Professional

### **CytoSpectre: A tool for spectral analysis of oriented structures on cellular and subcellular levels**

Kartasalo, K., Polonen, R.-P., Ojala, M., Rasku, J., Leikkala, J., Aalto-Setälä, K. & Kallio, P., 26 Oct 2015, In : BMC Bioinformatics. 16, 1, 23 p., 344.

Research output: Contribution to journal > Article > Scientific > peer-review

### **A NLOS-robust TOA positioning filter based on a skew-t measurement noise model**

Nurminen, H., Ardeshiri, T., Piche, R. & Gustafsson, F., 1 Oct 2015, *2015 International Conference on Indoor Positioning and Indoor Navigation (IPIN)*. IEEE, p. 1-7 7 p.

Research output: Chapter in Book/Report/Conference proceeding > Conference contribution > Scientific > peer-review

### **Polynomial Input-Output Stability for Linear Systems**

Paunonen, L. & Laakkonen, P., 1 Oct 2015, In : IEEE Transactions on Automatic Control. 60, 10, p. 2797-2802 6 p.

Research output: Contribution to journal > Article > Scientific > peer-review

### **VLT/SPHERE- and ALMA-based shape reconstruction of asteroid (3) Juno**

Viikinkoski, M., Kaasalainen, M., Durech, J., Carry, B., Marsset, M., Fusco, T., Dumas, C., Merline, W. J., Yang, B., Berthier, J., Kervella, P. & Vernazza, P., 1 Sep 2015, In : Astronomy and Astrophysics. 581, 5 p., L3.

Research output: Contribution to journal > Article > Scientific > peer-review

### **Stop It, and Be Stubborn!**

Valmari, A., 21 Jun 2015, *Application of Concurrency to System Design (ACSD): 2015 15th International Conference on*. Haar, S. & Meyer, R. (eds.). IEEE Computer Society, p. 10-19 10 p. 2

Research output: Chapter in Book/Report/Conference proceeding > Conference contribution > Scientific > peer-review

### **Gaussian filtering and variational approximations for Bayesian smoothing in continuous-discrete stochastic dynamic systems**

Ala-Luhtala, J., Särkkä, S. & Piche, R., Jun 2015, In : Signal Processing. 111, p. 124-136 13 p.

Research output: Contribution to journal > Article > Scientific > peer-review

### **Fundamental solution of k-hyperbolic harmonic functions in odd spaces**

Eriksson, S.-L. & Orelma, H., 13 Apr 2015, In : Journal of Physics: Conference Series. 597, 1, 012034.

Research output: Contribution to journal > Article > Scientific > peer-review

### **ADAM: A general method for using various data types in asteroid reconstruction**

Viikinkoski, M., Kaasalainen, M. & Durech, J., 1 Apr 2015, In : Astronomy and Astrophysics. 576, 11 p., A8.

Research output: Contribution to journal > Article > Scientific > peer-review

### **On improvement of transient stage of composite nonlinear feedback control using arbitrary order set point filters**

Pyrhönen, V.-P. & Koivisto, H., 1 Apr 2015, *2014 IEEE International Conference on Control System, Computing and Engineering (ICCSCE)*. Institute of Electrical and Electronics Engineers IEEE, p. 147 - 152 6 p.

Research output: Chapter in Book/Report/Conference proceeding › Conference contribution › Scientific › peer-review

### **Composite Nonlinear Feedback Control of a Chemical Reactor**

Pyrhönen, V-P. & Koivisto, H., 18 Mar 2015, *Proceedings of AutomaatioXXI, The Industrial Revolution of Internet – From Intelligent Devices to Networked Intelligence*. Helsinki, Finland: Suomen Automaatioseura ry, (SAS julkaisusarja; vol. 44).

Research output: Chapter in Book/Report/Conference proceeding › Conference contribution › Scientific › peer-review

### **Projektioppiminen: lähtökohtana ympäröivä maailma**

Eriksson, S-L. & Viro, E., 11 Mar 2015, In : LUMA-sanomat.

Research output: Contribution to journal › Article › Professional

### **Tampereen matemaattisten aineiden aineenopettajakoulutus**

Eriksson, S-L., Haukkanen, P., Hukka, T. I. & Lemmetyinen, H., 11 Mar 2015, In : Lumat. 3, 6, p. 800-807 8 p.

Research output: Contribution to journal › Article › Professional

### **Generalized hyperbolic harmonic functions in the plane**

Eriksson, S-L., Orelma, H. & Vuojamo, V., 10 Mar 2015, *Proceedings of the International Conference on Numerical Analysis and Applied Mathematics 2014 (ICNAAM-2014)*. American Institute of Physics Inc., Vol. 1648. 440007

Research output: Chapter in Book/Report/Conference proceeding › Conference contribution › Scientific › peer-review

### **Multi-stable dynamics of the non-adiabatic repressilator**

Potapov, I., Zhurov, B. & Volkov, E., 6 Mar 2015, In : Journal of the Royal Society. Interface. 12, 104, 20141315.

Research output: Contribution to journal › Article › Scientific › peer-review

### **Designing controllers with reduced order internal models**

Paunonen, L., 1 Mar 2015, In : IEEE Transactions on Automatic Control. 60, 3, p. 775-780 6 p., 6826480.

Research output: Contribution to journal › Article › Scientific › peer-review

### **Semantic Labeling of Places based on Phone Usage Features using Supervised Learning**

Rivero Rodriguez, A., Leppäkoski, H. & Piché, R., 5 Feb 2015, *2014 Ubiquitous Positioning Indoor Navigation and Location Based Service, UPINLBS 2014 - Conference Proceedings*. Piscataway, NJ, USA: IEEE, p. 97-102 6 p. 7033715

Research output: Chapter in Book/Report/Conference proceeding › Conference contribution › Scientific › peer-review

### **A general framework for island systems**

Foldes, S., Horváth, E. K., Radeleczki, S. & Waldhauser, T., 2015, In : Acta Universitatis Szegediensis: Acta Scientiarum Mathematicarum. 81, 1-2, p. 3-24 22 p.

Research output: Contribution to journal › Article › Scientific › peer-review

### **Analysis of geometric primitives in quantitative structure models of tree stems**

Åkerblom, M., Raunonen, P., Kaasalainen, M. & Casella, E., 2015, In : Remote Sensing. 7, 4, p. 4581-4603 23 p.

Research output: Contribution to journal › Article › Scientific › peer-review

### **Application and Theory of Petri Nets and Concurrency: 36th International Conference, PETRI NETS 2015 Brussels, Belgium, June 21-26, 2015 Proceedings**

Devillers, R. (ed.) & Valmari, A. (ed.), 2015, Springer Verlag. (Lecture Notes in Computer Science (including subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics); vol. 9115)

Research output: Book/Report › Anthology › Scientific › peer-review

### **Application of terrestrial LIDAR and modelling of tree branching structure for plant- scaling models in tropical forest trees**

Lau Sarmiento, A., Bartholomeus, H., Herold, M., Martius, C., Malhi, Y., Patrick Bentley, L., Shenkin, A. & Raunonen, P., 2015, *Proceedings of SilviLaser 2015: 14th conference on Lidar Applications for Assessing and Managing Forest Ecosystems*. p. 96-98 3 p.

Research output: Chapter in Book/Report/Conference proceeding › Conference contribution › Professional

### **Approach for Investigating Crowdfunding Campaigns with Platform Data: Case Indiegogo**

Huhtamäki, J., Lasrado, L., Menon, K., Kärkkäinen, H. & Jussila, J., 2015, *Academic MindTrek'15: September 22-24, 2015, Tampere, Finland*. ACM, 8 p.

Research output: Chapter in Book/Report/Conference proceeding > Conference contribution > Scientific > peer-review

### **Assessing coupling dynamics from an ensemble of time series**

Gómez-Herrero, G., Wu, W., Rutanen, K., Soriano, M. C., Pipa, G. & Vicente, R., 2015, In : *Entropy*. 17, 4, p. 1958-1970 13 p.

Research output: Contribution to journal > Article > Scientific > peer-review

### **Asteroid Models from Multiple Data Sources**

Đurech, J., Carry, B., Delbo, M., Kaasalainen, M. & Viikinkoski, M., 2015, *Asteroids IV*. Michel, P., DeMeo, F. E. & Bottke Jr., W. F. (eds.). Tucson: UNIVERSITY OF ARIZONA PRESS, p. 183-202 20 p.

Research output: Chapter in Book/Report/Conference proceeding > Chapter > Scientific > peer-review

### **Engineering motif search for large graphs**

Björklund, A., Kaski, P., Kowalik, Ł. & Lauri, J., 2015, *2015 Proceedings of the Seventeenth Workshop on Algorithm Engineering and Experiments (ALENEX)*. p. 104-118 15 p. (Workshop on Algorithm Engineering and Experiments).

Research output: Chapter in Book/Report/Conference proceeding > Conference contribution > Scientific > peer-review

### **Equal Opportunities in Education of Science, Mathematics and Technology**

Eriksson, S-L. A., 2015, *The Proceedings of International Symposium Justice and Solidarity: The European Utopia in a Globalising Era, Kuopio 2.-3. September 2014*. Laurinkari, J. & Tarvanen, M. (eds.). 14 p.

Research output: Chapter in Book/Report/Conference proceeding > Conference contribution > Professional

### **Frequency domain robust regulation of signals generated by an infinite-dimensional exosystem**

Laakkonen, P. & Pohjolainen, S., 2015, In : *SIAM Journal on Control and Optimization*. 53, 1, p. 139-166 28 p.

Research output: Contribution to journal > Article > Scientific > peer-review

### **Infinitesimals and Pavelka logic**

Turunen, E. & Navara, M., 2015, *PROCEEDINGS OF THE 2015 CONFERENCE OF THE INTERNATIONAL FUZZY SYSTEMS ASSOCIATION AND THE EUROPEAN SOCIETY FOR FUZZY LOGIC AND TECHNOLOGY*. Alonso, JM., Bustince, H. & Reformat, M. (eds.). PARIS: Atlantis Press, p. 1027-1033 7 p. (Advances in Intelligent Systems Research; vol. 89).

Research output: Chapter in Book/Report/Conference proceeding > Conference contribution > Scientific > peer-review

### **Massive-Scale Tree Modelling from TLS Data**

Raunonen, P., Casella, E., Calders, K., Murphy, S., Åkerblom, M. & Kaasalainen, M., 2015, *ISPRS Annals of the Photogrammetry, Remote Sensing and Spatial Information Sciences*. Stilla, U. & Heipke, C. (eds.). GOTTINGEN: COPERNICUS GESELLSCHAFT MBH, Vol. II-3/W4. p. 189-196 8 p. (International Archives of the Photogrammetry Remote Sensing and Spatial Information Sciences; vol. 43).

Research output: Chapter in Book/Report/Conference proceeding > Conference contribution > Scientific > peer-review

### **Motion Model for Positioning with Graph-Based Indoor Map**

Nurminen, H., Koivisto, M., Ali-Löytty, S. & Piche, R., 2015, *2014 International Conference on Indoor Positioning and Indoor Navigation (IPIN), 27-30 Oct. 2014, Busan, South Korea*. Piscataway, NJ: IEEE, p. 646-655 10 p.

Research output: Chapter in Book/Report/Conference proceeding > Conference contribution > Scientific > peer-review

### **New Insights for Relational Capital**

Still, K., Huhtamäki, J. & Russell, M. G., 2015, In : *Electronic Journal of Knowledge Management*. 13, 1, p. 167-182 16 p.

Research output: Contribution to journal > Article > Scientific > peer-review

### **Nondestructive estimates of above-ground biomass using terrestrial laser scanning**

Calders, K., Newnham, G., Burt, A., Murphy, S., Raunonen, P., Herold, M., Culvenor, D., Avitabile, V., Disney, M., Armston, J. & Kaasalainen, M., 2015, In : *Methods in Ecology and Evolution*. 6, 2, p. 198-208 11 p.

Research output: Contribution to journal > Article > Scientific > peer-review

### **On constructibility and unconstructibility of LTS operators from other LTS operators**

Valmari, A., 2015, In : Acta Informatica. 52, 2-3, p. 207-234 28 p.

Research output: Contribution to journal › Article › Scientific › peer-review

### **On Robustness of Strongly Stable Semigroups with Spectrum on $\mathbb{R}$**

Paunonen, L., 2015, *Semigroups of Operators -Theory and Applications: Będlewo, Poland, October 2013*. Banasiak, J., Bobrowski, A. & Lachowicz, M. (eds.). Springer International Publishing, p. 105-121 17 p. (Springer Proceedings in Mathematics & Statistics; vol. 113).

Research output: Chapter in Book/Report/Conference proceeding › Chapter › Scientific › peer-review

### **On Robust Output Regulation for Continuous-Time Periodic Systems**

Paunonen, L., 2015, *2015 Proceedings of the SIAM Conference on Control and its Applications*. SIAM, Society for Industrial and Applied Mathematics, 7 p.

Research output: Chapter in Book/Report/Conference proceeding › Conference contribution › Scientific › peer-review

### **Ostinato: The Exploration-Automation Cycle of User-Centric, Process-Automated Data-Driven Visual Network Analytics**

Huhtamäki, J., Russell, M. G., Rubens, N. & Still, K., 2015, *Transparency in Social Media: Tools, Methods and Algorithms for Mediating Online Interactions*. Matei, S. A., Russell, M. G. & Bertino, E. (eds.). Springer International Publishing, p. 197-222 (Computational Social Science).

Research output: Chapter in Book/Report/Conference proceeding › Chapter › Scientific › peer-review

### **Perfect Pavelka Logic**

Turunen, E. & Navara, M., 2015, In : Fuzzy Sets and Systems.

Research output: Contribution to journal › Article › Scientific › peer-review

### **Practical Partial Order Reduction for CSP**

Gibson-Robinson, T., Hansen, H., Roscoe, A. W. & Wang, X., 2015, *Nasa Formal Methods: 7th International Symposium, NFM 2015, Pasadena, CA, USA, April 27-29, 2015, Proceedings*. Springer International Publishing, Vol. 9058. p. 188-203 16 p. (Lecture Notes in Computer Science; vol. 9058).

Research output: Chapter in Book/Report/Conference proceeding › Conference contribution › Scientific › peer-review

### **Projektioppiminen yläkoulun matematiikassa**

Viro, E. & Eriksson, S-L., 2015, In : Lumat. 3, 7, p. 1005-1009 5 p.

Research output: Contribution to journal › Article › Professional

### **Quantitative structure tree models from terrestrial laser scanner data**

Raunonen, P. A., 2015, *Proceedings of SilviLaser 2015: 14th conference on Lidar Applications for Assessing and Managing Forest Ecosystems*. p. 32-34 3 p.

Research output: Chapter in Book/Report/Conference proceeding › Conference contribution › Professional

### **Reducing uncertainties in above-ground biomass estimates using terrestrial laser scanning**

Calders, K., Burt, A., Newnham, G., Disney, M., Murphy, S., Raunonen, P., Herold, M., Culvenor, D., Armston, J., Avitabile, V. & Kaasalainen, M., 2015, *Proceedings of SilviLaser 2015: 14th conference on Lidar Applications for Assessing and Managing Forest Ecosystems*. p. 197-199 3 p.

Research output: Chapter in Book/Report/Conference proceeding › Conference contribution › Professional

### **Robustness of strong stability of discrete semigroups**

Paunonen, L., 2015, In : Systems and Control Letters. 75, p. 35-40 6 p.

Research output: Contribution to journal › Article › Scientific › peer-review

### **Robust Regulation of SISO Systems: The Fractional Ideal Approach**

Laakkonen, P. & Quadrat, A., 2015, *Proceedings of the SIAM Conference on Control and Its Applications (CT15)*. SIAM, Society for Industrial and Applied Mathematics, p. 311-318 8 p.

Research output: Chapter in Book/Report/Conference proceeding › Conference contribution › Scientific › peer-review

### **Robust Regulation Theory for Transfer Functions With a Coprime Factorization**

Laakkonen, P., 2015, In : IEEE Transactions on Automatic Control. 6 p.  
Research output: Contribution to journal › Article › Scientific › peer-review

### **Simulointi nopeuttaa käyttöä määrittä**

Ojala, P., Saarenrinne, P., Miettinen, J., Multanen, P., Kiilunen, J., Hietala, J-P., Kolu, A., Pippola, J., Mostofizadeh, M. & Ylönen, M., 2015, In : Promaint. 2, p. 24-27 4 p.  
Research output: Contribution to journal › Article › Professional

### **Some Ring Theory from Jenő Szegedy**

Foldes, S., 2015, In : Miskolc Mathematical Notes. 16, 1, p. 115-121 7 p.  
Research output: Contribution to journal › Article › Scientific › peer-review

### **Terrestrial LiDAR and 3D tree Quantitative Structure Model for quantification of aboveground biomass loss from selective logging in a tropical rainforest of Peru**

Gonzalez de Tanago, J., Bartholomeus, H., Joseph, S., Herold, M., Avitabile, V., Goodman, R., Raunonen, P. & Burt, A., 2015, *Proceedings of SilviLaser 2015: 14th conference on Lidar Applications for Assessing and Managing Forest Ecosystems*. p. 119-121 3 p.  
Research output: Chapter in Book/Report/Conference proceeding › Conference contribution › Professional

### **Traceability of essential climate variables through forest stand reconstruction with terrestrial laser scanning**

Calders, K., Disney, M., Nightingale, J., Origo, N., Barker, A., Raunonen, P. A., Lewis, P., Burt, A., Brennan, J. & Fox, N., 2015, *Proceedings of SilviLaser 2015: 14th conference on Lidar Applications for Assessing and Managing Forest Ecosystems*. p. 122-124 3 p.  
Research output: Chapter in Book/Report/Conference proceeding › Conference contribution › Professional

### **Using video games to combine learning and assessment in mathematics education**

Kiili, K., Devlin, K., Perttula, A., Tuomi, S. & Lindstedt, A., 2015, In : International Journal of Serious Games. 2, 4  
Research output: Contribution to journal › Article › Scientific › peer-review

### **Guard-based Partial Order Reduction**

Laarman, A., Pater, E., Van de Pol, J. & Hansen, H., Dec 2014, In : International Journal on Software Tools for Technology Transfer. 18, 4, p. 427-448  
Research output: Contribution to journal › Article › Scientific › peer-review

### **UWB Positioning with Generalized Gaussian Mixture Filters**

Muller, P., Wymeersch, H. & Piche, R., Oct 2014, In : IEEE Transactions on Mobile Computing. 13, 10, p. 2406-2414 9 p.  
Research output: Contribution to journal › Article › Scientific › peer-review

### **Quantitative Analysis of Dynamic Association in Live Biological Fluorescent Samples**

Ruusuvuori, P., Paavolainen, L., Rutanen, K., Maki, A., Huttunen, H. & Marjomaki, V., 11 Apr 2014, In : PLoS ONE. 9, 4, 11 p., 94245.  
Research output: Contribution to journal › Article › Scientific › peer-review

### **A Measurement-based Statistical Model to Evaluate Uncertainty in Long-range Noise Assessments**

Maijala, P., 3 Jan 2014, VTT. 178 p. (VTT Science; vol. 48)  
Research output: Book/Report › Doctoral thesis › Monograph

### **20th Inverse Days 2014, Tampere 9th-11th December 2014: Abstracts**

Åkerblom, M. (ed.), 2014, Tampere University of Technology, Department of Mathematics. 38 p. (Tampere University of Technology. Department of Mathematics. Research Report; vol. 101)  
Research output: Book/Report › Commissioned report › Professional

### **A comparison of confluence and ample sets in probabilistic and non-probabilistic branching time**

Hansen, H. & Timmer, M., 2014, In : *Theoretical Computer Science*. 528, p. 103-123 21 p.

Research output: Contribution to journal › Article › Scientific › peer-review

### **Adaptive mobile tracking in unknown non-line-of-sight conditions with application to digital TV networks**

Chen, L., Piche, R., Kuusniemi, H. & Chen, R., 2014, In : *Eurasip Journal on Advances in Signal Processing*. 2014, 10 p., UNSP 22.

Research output: Contribution to journal › Article › Scientific › peer-review

### **A field test of parametric WLAN-fingerprint-positioning methods**

Muller, P., Raitoharju, M. & Piche, R., 2014, *17th International Conference on Information Fusion (FUSION), 7-10 July 2014, Salamanca, Spain*. Piscataway: Institute of Electrical and Electronics Engineers, p. 1-8 8 p.

Research output: Chapter in Book/Report/Conference proceeding › Conference contribution › Scientific › peer-review

### **A method to enforce map constraints in a particle filter's position estimate**

Piche, R. & Koivisto, M., 2014, *2014 11th Workshop on Positioning, Navigation and Communication (WPNC), 12-13 March 2014, Dresden, Germany*. IEEE, 4 p.

Research output: Chapter in Book/Report/Conference proceeding › Conference contribution › Scientific › peer-review

### **An algebraic study of Peterson's Intermediate Syllogisms**

Turunen, E., 2014, In : *Soft Computing*. p. 1-14 14 p.

Research output: Contribution to journal › Article › Scientific › peer-review

### **A New Controller Structure for Robust Output Regulation**

Paunonen, L. & Pohjolainen, S., 2014, *Proceedings of the 53rd IEEE Conference on Decision and Control, IEEE CDC 2014, 15-17 December, 2014, Los Angeles, CA, USA*. IEEE, p. 4721-4726 6 p. (IEEE Conference on Decision and Control).

Research output: Chapter in Book/Report/Conference proceeding › Conference contribution › Scientific › peer-review

### **Another paraconsistent algebraic semantics for Lukasiewicz-Pavelka logic**

Rodriguez, J. T., Turunen, E., Ruan, D. & Montero, J., 2014, In : *Fuzzy Sets and Systems*. 242, p. 132-147 16 p.

Research output: Contribution to journal › Article › Scientific › peer-review

### **Application of Design Review to Probabilistic Risk Assessment in a Large Investment Project**

Virtanen, S., Penttinen, J.-P., Kiiski, M. & Jokinen, J., 2014, *Proceedings of the Probabilistic Safety Assessment and Management PSAM12, June 2014, Honolulu, Hawaii*. p. 1-12 12 p.

Research output: Chapter in Book/Report/Conference proceeding › Conference contribution › Scientific › peer-review

### **Application of Hill-Clohessey-Wiltshire Equation in GNSS Orbit Prediction**

Zhang, X. & Piche, R., 2014, *Proceedings of 2014 International Conference on Localization and GNSS (ICL-GNSS), Helsinki, Finland, June 24-26, 2014*. Nurmi, J., Ruotsalainen, L., Lohan, E.-S., Salcedo, J. & Thombre, S. (eds.).

Piscataway: IEEE, p. 1-6 6 p.

Research output: Chapter in Book/Report/Conference proceeding › Conference contribution › Scientific › peer-review

### **A Simple Character String Proof of the "True but Unprovable" Version of Gödel's First Incompleteness Theorem**

Valmari, A., 2014, In : *Electronic Proceedings in Theoretical Computer Science*. 151, p. 355-369 15 p., 25.

Research output: Contribution to journal › Article › Scientific › peer-review

### **Bagdad - matematiikkaa täältä ikuisuuteen matematiikkanäyttely**

Eriksson, S.-L. & Vainio, J., 2014, In : *Lumat*. 2, 1, p. 17-46 30 p.

Research output: Contribution to journal › Article › Professional

### **Bayesian Methods for Hybrid Indoor Positioning**

Nurminen, H., 2014, *IPIN 2014 - 5th International Conference on Indoor Positioning and Indoor Navigation, 27th - 30th October, 2014, Busan, South Korea*. 2 p.

Research output: Chapter in Book/Report/Conference proceeding › Conference contribution › Scientific › peer-review



### **Change Detection of Tree Biomass with Terrestrial Laser Scanning and Quantitative Structure Modelling**

Kaasalainen, S., Krooks, A., Liski, J., Raunonen, P., Kaartinen, H., Kaasalainen, M., Puttonen, E., Anttila, K. & Mäkipää, R., 2014, In : *Remote Sensing*. 6, 5, p. 3906-3922 25 p.

Research output: Contribution to journal › Article › Scientific › peer-review

### **Combinational Studies of Vectors and Sequences**

Major, L., 2014, Tampere: Tampere University of Technology. 73 p. (Tampere University of Technology. Publication; vol. 1220)

Research output: Book/Report › Doctoral thesis › Collection of Articles

### **Detection of anomalies in radio tomography of asteroids: source count and forward errors**

Pursiainen, S. & Kaasalainen, M., 2014, In : *Planetary and Space Science*. 99, p. 36-47 12 p.

Research output: Contribution to journal › Article › Scientific › peer-review

### **Evaluating the Consistency of Estimation**

Ivanov, P., Ali-Löytty, S. & Piche, R., 2014, *Proceedings of 2014 International Conference on Localization and GNSS (ICL-GNSS), Helsinki, Finland, June 24-26, 2014*. Piscataway: IEEE, 5 p.

Research output: Chapter in Book/Report/Conference proceeding › Conference contribution › Scientific › peer-review

### **Gaussian Scale Mixture Models For Robust Linear Multivariate Regression With Missing Data**

Ala-Luhtala, J. & Piche, R., 2014, In : *Communications in Statistics: Simulation and Computation*.

Research output: Contribution to journal › Article › Scientific › peer-review

### **Indirect Emissions of Forest Bioenergy: Detailed Modelling of Stump-Root Systems**

Liski, J., Kaasalainen, S., Raunonen, P., Akujärvi, A., Krooks, A., Repo, A. & Kaasalainen, M., 2014, In : *Global Change Biology Bioenergy*. 6, 6, p. 777-784 8 p.

Research output: Contribution to journal › Article › Scientific › peer-review

### **Integral Formulas for k-hypermonogenic Functions in R3**

Eriksson, S-L., Orelma, H. & Nelson, V., 2014, *Hypercomplex Analysis: New Perspectives and Applications*. Springer, p. 119-132 14 p. (Trends in Mathematics).

Research output: Chapter in Book/Report/Conference proceeding › Chapter › Scientific › peer-review

### **Minimal Solutions of Fuzzy Relation Equations with General Operators on the Unit Interval**

Medina, J., Turunen, E., Bartl, E. & Diaz-Moreno, J. C., 2014, *Information Processing and Management of Uncertainty in Knowledge-Based Systems. 15th International Conference, IPMU 2014, Montpellier, France, July 15-19, 2014, Proceedings, Part III. Communications in Computer and Information Science*. Springer International Publishing, p. 81-90 10 p. (Communications in Computer and Information Science; vol. 444).

Research output: Chapter in Book/Report/Conference proceeding › Conference contribution › Scientific › peer-review

### **Modelling of Joule heating based self-alignment method for metal grid line passivation**

Janka, M., Raunonen, P., Tuukkanen, S. & Lupo, D., 2014, *2013 MRS Fall Meeting - Symposium M - Large-Area Processing and Patterning for Active Optical and Electronic Devices*. MATERIALS RESEARCH SOCIETY, 6 p.

Research output: Chapter in Book/Report/Conference proceeding › Conference contribution › Scientific › peer-review

### **New era of Business Analytics - Making sense of business ecosystems**

Jussila, J., Kärkkäinen, H., Kortelainen, S., Huhtamäki, J., Aho, T. & Tebest, T., 2014, *Academic MindTrek Conference 2014, Tampere, Finland, November 4-6, 2014*. Lugmayr, A., Franssila, H. & Paavilainen, J. (eds.). New York, NY: ACM, p. 276-278 3 p. (MindTrek Conference).

Research output: Chapter in Book/Report/Conference proceeding › Conference contribution › Scientific › peer-review

### **Old and New Algorithms for Minimal Coverability Sets**

Valmari, A. & Hansen, H., 2014, In : *Fundamenta Informaticae*. 131, 1, p. 1-25 25 p.

Research output: Contribution to journal › Article › Scientific › peer-review

#### **On Convergence and Accuracy of State-Space Approximations of Squared Exponential Covariance Functions**

Särkkä, S. & Piche, R., 2014, *2014 IEEE International Workshop on Machine Learning for Signal Processing (MLSP), September 21-24, 2014, Reims, France*. Piscataway: Institute of Electrical and Electronics Engineers, p. 1-6 6 p.

Research output: Chapter in Book/Report/Conference proceeding > Conference contribution > Scientific > peer-review

#### **On polynomial stability of linear systems**

Paunonen, L. & Laakkonen, P., 2014, *21st International Symposium on Mathematical Theory of Networks and Systems, MTNS 2014, July 7-11, 2014, Groningen, the Netherlands*. Groningen, the Netherlands: University of Groningen, p. 233-238 6 p. (International Symposium on Mathematical Theory of Networks and Systems).

Research output: Chapter in Book/Report/Conference proceeding > Conference contribution > Scientific > peer-review

#### **On the Structure of Robust Controllers for Infinite-Dimensional Systems**

Hämäläinen, T. & Pohjolainen, S., 2014, *21st International Symposium on Mathematical Theory of Networks and Systems, MTNS 2014, July 7-11, 2014, Groningen, The Netherlands*. Groningen, the Netherlands: University of Groningen, p. 938-941 4 p.

Research output: Chapter in Book/Report/Conference proceeding > Conference contribution > Scientific > peer-review

#### **On Vekua Systems and Their Connections to Hyperbolic Function Theory in the Plane**

Eriksson, S-L. & Orelma, H., 2014, In : *Advances in Applied Clifford Algebras*. 24, 4, p. 1027-1038 12 p.

Research output: Contribution to journal > Article > Scientific > peer-review

#### **Optimal storage scheme for access point coverage data**

Wirola, L., Laine, T., Raitoharju, M. & Sirola, N., 2014, Patent No. Pat. US 8 816 908 B2, Priority date 26 Aug 2014, Priority No. US 2012/0139790 A1, Jun. 7, 2012

Research output: Patent > Scientific

#### **Optimization of large-area OLED current distribution grids with self-aligned passivation**

Janka, M., Saukko, E., Raunonen, P. & Lupo, D., 2014, In : *Organic Electronics*. 15, 12, p. 3431-3438 8 p.

Research output: Contribution to journal > Article > Scientific > peer-review

#### **Polynomial stability of semigroups generated by operator matrices**

Paunonen, L., 2014, In : *Journal of Evolution Equations*. 14, 4, p. 885-911 27 p.

Research output: Contribution to journal > Article > Scientific > peer-review

#### **Predicting tree structure from tree height using terrestrial laser scanning and quantitative structure models**

Krooks, A., Kaasalainen, S., Kankare, V., Joensuu, M., Raunonen, P. & Kaasalainen, M., 2014, In : *Silva Fennica*. 48, 2, p. 1-11 11 p., 1125.

Research output: Contribution to journal > Article > Scientific > peer-review

#### **Robust controller design for infinite-dimensional exosystems**

Paunonen, L. & Pohjolainen, S., 2014, In : *International Journal of Robust and Nonlinear Control*. 24, 5, p. 825-858 34 p.

Research output: Contribution to journal > Article > Scientific > peer-review

#### **Robustness of Controllers for SISO-Plants and Signals Generated by an Infinite-Dimensional Exosystem**

Laakkonen, P. & Pohjolainen, S., 2014, *19th International Conference on Methods and Models in Automation and Robotics, MMAR 2014, Miedzyzdroje, Poland, September 2-5, 2014*. IEEE, p. 538-543 6 p. (International conference on methods and models in automation and robotics).

Research output: Chapter in Book/Report/Conference proceeding > Conference contribution > Scientific > peer-review

#### **Robustness of strong stability of semigroups**

Paunonen, L., 2014, In : *Journal of Differential Equations*. 257, 12, p. 4403-4436 34 p.

Research output: Contribution to journal > Article > Scientific > peer-review

### **Shape reconstruction from images: Pixel fields and Fourier transform**

Viikinkoski, M. & Kaasalainen, M., 2014, In : *Inverse Problems and Imaging*. 8, 3, p. 885-900 16 p.

Research output: Contribution to journal > Article > Scientific > peer-review

### **Sparse source travel-time tomography of a laboratory target: accuracy and robustness of anomaly detection**

Pursiainen, S. & Kaasalainen, M., 2014, In : *Inverse Problems*. 30, 11, p. 1-19 19 p., 114016.

Research output: Contribution to journal > Article > Scientific > peer-review

### **Taivaalliset projektiot: terapiaa imversio-ongelmaisille**

Kaasalainen, M., 2014, In : *Arkhimedes*. 4, p. 25-31 7 p.

Research output: Contribution to journal > Article > Professional

### **The Cauchy-Schwarz inequality in Cayley graph and tournament structures on finite fields**

Foldes, S. & Major, L., 2014, In : *Miskolc Mathematical Notes*. 15, 1, p. 153-158 6 p.

Research output: Contribution to journal > Article > Scientific > peer-review

### **The Internal Model Principle for Systems with Unbounded Control and Observation**

Paunonen, L. & Pohjolainen, S., 2014, In : *SIAM Journal on Control and Optimization*. 52, 6, p. 3967-4000 34 p.

Research output: Contribution to journal > Article > Scientific > peer-review

### **The puzzling mutual orbit of the binary Trojan asteroid (624) Hektor**

Marchis, F., Durech, J., Castillo-Rogez, J., Vachier, F., Cuk, M., Berthier, J., Wong, M. H., Kalas, P., Duchene, G., Van Dam, M. A., Hamanowa, H. & Viikinkoski, M., 2014, In : *Astrophysical Journal Letters*. 783, 2

Research output: Contribution to journal > Article > Scientific > peer-review

### **The Role of Exosystems in Output Regulation**

Paunonen, L., 2014, In : *IEEE Transactions on Automatic Control*. 59, 8, p. 2301-2305 5 p.

Research output: Contribution to journal > Article > Scientific > peer-review

### **Tree Root System Characterization and Volume Estimation by Terrestrial Laser Scanning and Quantitative Structure Modeling**

Smith, A., Astrup, R., Raunonen, P., Liski, J., Krooks, A., Kaasalainen, S., Åkerblom, M. & Kaasalainen, M., 2014, In : *Forests: Open Access Journal*. 5, p. 3274-3294 21 p.

Research output: Contribution to journal > Article > Scientific > peer-review

### **Visualizing informal learning behavior from conference participants Twitter data**

Aramo-Immonen, H., Jussila, J. & Huhtamäki, J., 2014, *Second International Conference on Technological Ecosystems for Enhancing Multiculturality, TEEM 2014, Salamanca, Spain, October 1-3, 2014*. Francisco Jose, G-P. (ed.). New York, NY: ACM, p. 603-610 8 p. (International Conference on Technological Ecosystems for Enhancing Multiculturality).

Research output: Chapter in Book/Report/Conference proceeding > Conference contribution > Scientific > peer-review

### **Visual network analysis of Twitter data for co-organizing conferences: case CMAD 2013**

Jussila, J., Huhtamäki, J., Henttonen, K., Kärkkäinen, H. & Still, K., 2014, *47th Hawaii International Conference on System Sciences, HICSS 2014, 6.-9.1.2014, Waikoloa, HI*. Computer Society Press, p. 1474-1483 10 p. (Annual Hawaii International Conference on System Sciences).

Research output: Chapter in Book/Report/Conference proceeding > Conference contribution > Scientific > peer-review

### **Robust Regulation for Infinite-Dimensional Systems and Signals in the Frequency Domain**

Laakkonen, P., 25 Oct 2013, Tampere: Tampere University of Technology. 146 p. (Tampere University of Technology. Publication; vol. 1166)

Research output: Book/Report > Doctoral thesis > Monograph

### **A Hyperbolic Dirac Operator and its Kernels**

Eriksson, S-L., 2013, In : *Complex Variables and Elliptic Equations*. 58, 6, p. 767-781 15 p.

Research output: Contribution to journal > Article > Scientific > peer-review

#### **A linear state model for PDR+WLAN positioning**

Raitoharju, M., Nurminen, H. & Piche, R., 2013, *Proceedings of the 2013 Conference on Design and Architectures for Signal and Image Processing DASIP Cagliari, Italy, October 8-10, 2013*. Morawiec, A. & Hinderscheit, J. (eds.). Belmont France: European Electronic Chips & Systems Design Initiative (ECSI), p. 113-118 6 p. (Conference on Design and Architectures for Signal and Image Processing).

Research output: Chapter in Book/Report/Conference proceeding > Conference contribution > Scientific > peer-review

#### **A Lyapunov approach to strong stability of semigroups**

Paunonen, L. & Zwart, H., 2013, In : *Systems and Control Letters*. 62, 8, p. 673-678 6 p.

Research output: Contribution to journal > Article > Scientific > peer-review

#### **A note on compactness in a fuzzy metric space**

Kaleva, O. & Kauhanen, J., 2013, In : *Fuzzy Sets and Systems*. p. 135-139 5 p., 238.

Research output: Contribution to journal > Article > Scientific > peer-review

#### **Antichain Cutsets of Strongly Connected Posets**

Foldes, S. & Woodroffe, R., 2013, In : *Order: A Journal on the Theory of Ordered Sets and Its Applications*. 30, 2, p. 351-361 11 p.

Research output: Contribution to journal > Article > Scientific > peer-review

#### **Bandwidth and Storage Reduction of Radio Maps for Offline WLAN Positioning**

Wirola, L., Wirola, L. & Piche, R., 2013, *International Conference on Indoor Positioning and Indoor Navigation, IPIN 2013, 28-31 Oct 2013, Montbéliard-Belfort, France*. Piscataway, NJ: IEEE, p. 665-673 9 p. (International Conference on Indoor Positioning and Indoor Navigation).

Research output: Chapter in Book/Report/Conference proceeding > Conference contribution > Scientific > peer-review

#### **Bayesian analysis of GUHA hypotheses**

Piche, R., Järvenpää, M., Turunen, E. & Simunek, M., 2013, In : *Journal of Intelligent Information Systems*. 42, 1, p. 47-73 28 p.

Research output: Contribution to journal > Article > Scientific > peer-review

#### **Bayes trees and forests: combining precise empirical and theoretical tree models**

Kaasalainen, M., Potapov, I., Raumonon, P., Åkerblom, M., Sievänen, R. & Kaasalainen, S., 2013, *7th International Conference on Functional-Structural Plant Models, FSPM2013, FSPM2013, 9.-14.6.2013, Saariselkä, Finland*. Sievänen, R., Nikinmaa, E., Godin, C., Lintunen, A. & Nygren, P. (eds.). Vantaa: Finnish Society of Forest Science; Finnish Forest Research Institute; University of Helsinki, p. 61-63 3 p. (International Conference on Functional-Structural Plant Models).

Research output: Chapter in Book/Report/Conference proceeding > Conference contribution > Scientific > peer-review

#### **Canonical methods of constructing invariant tori by phase-space sampling**

Laakso, T. & Kaasalainen, M., 2013, In : *Physica D: Nonlinear Phenomena*. 243, 1, p. 14-19 6 p.

Research output: Contribution to journal > Article > Scientific > peer-review

#### **Challenges in Heterogeneous Web Data Analytics - Case Finnish Growth Companies in Social Media**

Salonen, J., Huhtamäki, J. & Nykänen, O., 2013, *17th International Academic MindTrek Conference, October 1-4, 2013, Tampere, Finland*. ACM, p. 131-138 8 p. (MindTrek Conference).

Research output: Chapter in Book/Report/Conference proceeding > Conference contribution > Scientific > peer-review

#### **Compact YORP formulation and stability analysis**

Kaasalainen, M. & Nortunen, H., 2013, In : *Astronomy and Astrophysics*. 558, p. 1-8 8 p., A104.

Research output: Contribution to journal > Article > Scientific > peer-review

#### **Datamap Visualization Technique for Interactively Visualizing Large Datasets**

Nykänen, O., 2013, *17th International Academic MindTrek Conference, October 1-4, 2013, Tampere, Finland*. Lugmayr, A., Franssila, H., Kärkkäinen, H. & Paavilainen, J. (eds.). ACM, p. 52-58 7 p. (MindTrek Conference).

Research output: Chapter in Book/Report/Conference proceeding > Conference contribution > Scientific > peer-review

### **Device self-calibration in location systems using signal strength histograms**

Laoudias, C., Piche, R. & Panayiotou, C. G., 2013, In : *Journal of Location Based Services*. 7, 3, p. 165-181 17 p.

Research output: Contribution to journal › Article › Scientific › peer-review

### **Estimating Above Ground Biomass from Terrestrial Laser Scanning in Australian Eucalypt Open Forest**

Calders, K., Newnham, G., Herold, M., Murphy, S., Culvenor, D., Raunonen, P., Burt, A., Armston, J., Avitabile, V. & Disney, M., 2013, *13th International Conference on LiDAR Applications for Assessing Forest Ecosystems, SilviLaser 2013, 9.-11.10.2013. Beijing, China*. Beijing, China: Silvilaser Beijing 2013, p. 1-7 7 p. (International Conference on LiDAR Applications for Assessing Forest Ecosystems).

Research output: Chapter in Book/Report/Conference proceeding › Conference contribution › Scientific › peer-review

### **Estimation of initial state and model parameters for autonomous GNSS orbit prediction**

Ala-Luhtala, J., Seppänen, M., Ali-Löytty, S., Piche, R. & Nurminen, H., 2013, *International Global Navigation Satellite Systems Society IGNSS Symposium 2013, 16-18 July, 2013, Gold Coast, Queensland, Australia*. Tweed Heads, NSW, Australia: IGNSS Society, p. 1-15 15 p.

Research output: Chapter in Book/Report/Conference proceeding › Conference contribution › Scientific › peer-review

### **Estimation of Model Parameters**

Piche, R., 2013, *Mathematical Modeling with Multidisciplinary Applications*. Yang, X-S. (ed.). Hoboken, NJ, USA: John Wiley & Sons, p. 169-190 22 p.

Research output: Chapter in Book/Report/Conference proceeding › Chapter › Scientific › peer-review

### **Estimation of the Mechanical Power of a Kite Wind Generator**

Rautakorpi, P., Argatov, I. & Silvennoinen, R., 2013, *Renewable Energy for Sustainable Future*. Lohani, S. P. (ed.). Hong Kong: ICONCEPT PRESS, p. 1-28 28 p.

Research output: Chapter in Book/Report/Conference proceeding › Chapter › Scientific › peer-review

### **Fast Automatic Method for Constructing Topologically and Geometrically Precise Tree Models from TLS Data**

Raunonen, P., Casella, E., Disney, M., Åkerblom, M. & Kaasalainen, M., 2013, *7th International Conference on Functional-Structural Plant Models, FSPM2013, 9.-14.6.2013, Saariselkä, Finland*. Sievänen, R., Nikinmaa, E., Godin, C., Lintunen, A. & Nygren, P. (eds.). Vantaa: Finnish Society of Forest Science; Finnish Forest Research Institute; University of Helsinki, p. 89-91 3 p. (International Conference on Functional-Structural Plant Models).

Research output: Chapter in Book/Report/Conference proceeding › Conference contribution › Scientific › peer-review

### **Fast automatic precision tree models from terrestrial laser scanner data**

Raunonen, P., Kaasalainen, M., Åkerblom, M., Kaasalainen, S., Kaartinen, H., Vastaranta, M., Holopainen, M., Disney, M. & Lewis, P., 2013, In : *Remote Sensing*. 5, 2, p. 491-520 30 p.

Research output: Contribution to journal › Article › Scientific › peer-review

### **Hyperbolic Laplace Operator and the Weinstein Equation in $R^3$**

Eriksson, S-L. & Orelma, H., 2013, In : *Advances in Applied Clifford Algebras*. p. 1-16 16 p.

Research output: Contribution to journal › Article › Scientific › peer-review

### **Improving engineering students' mathematics skills and analysing their behaviour using ICT - tools.**

Pohjolainen, S., Nykänen, O., Venho, J. & Kangas, J., 2013, *Proceedings of annual SEFI Conference, 16-20 September 2013, Leuven, Belgium*. Brussels, Belgium: European Society for Engineering Education SEFI, p. 1-8 8 p. 163. (Annual Conference of the European Society for Engineering Education).

Research output: Chapter in Book/Report/Conference proceeding › Conference contribution › Scientific › peer-review

### **Information visualization of Twitter data for co-organizing conferences**

Jussila, J., Huhtamäki, J., Kärkkäinen, H. & Still, K., 2013, *17th International Academic MindTrek Conference, October 1-4, 2013, Tampere, Finland*. New York, NY: ACM, p. 139-145 7 p. (MindTrek Conference).

Research output: Chapter in Book/Report/Conference proceeding › Conference contribution › Scientific › peer-review

### **Introduction to Statistical Data Analysis for Engineers and Scientists**

Piche, R., 2013, Las Vegas, NV, USA: CREATSPACE. 136 p.

Research output: [Book/Report](#) > [Book](#) > [Professional](#)

### **Iterative alternating sequential (IAS) method for radio tomography of asteroids in 3D**

Pursiainen, S. & Kaasalainen, M., 2013, In : *Planetary and Space Science*. 82-83, p. 84-98 15 p.

Research output: [Contribution to journal](#) > [Article](#) > [Scientific](#) > [peer-review](#)

### **Least-Squares Transformations between Point-Sets**

Rutanan, K., Gomez-Herrero, G., Eriksson, S-L. & Egiazarian, K., 2013, *Image Analysis, 18th Scandinavian Conference, SCIA 2013, Espoo, Finland, June 17-20, 2013, Proceedings*. Kämäräinen, J-K. & Koskela, M. (eds.). Berlin: Springer, p. 501-511 11 p. (Lecture Notes in Computer Science; vol. 7944).

Research output: [Chapter in Book/Report/Conference proceeding](#) > [Conference contribution](#) > [Scientific](#) > [peer-review](#)

### **Manifolds in electromagnetism and superconductor modelling: Using their properties to model critical current of twisted conductors in self-field with 2-D model**

Stenvall, A., Tarhasaari, T., Grilli, F., Raunonen, P., Vojenciak, M. & Pellikka, M., 2013, In : *Cryogenics*. 53, p. 135-141 7 p.

Research output: [Contribution to journal](#) > [Article](#) > [Scientific](#) > [peer-review](#)

### **Matematiikan kirjallinen kielentäminen yliopiston matematiikan opetuksessa**

Joutsenlahti, J., Sarikka, H., Kangas, J. & Harjulehto, P., 2013, *Matematiikan ja luonnontieteiden opetuksen tutkimusseuran konferenssijulkaisu 2012. Tutkimuksia / Jyväskylän yliopisto, opettajankoulutuslaitos*. Hähkiöniemi, M., Leppäaho, H., Nieminen, P. & Viiri, J. (eds.). Jyväskylä: University of Jyväskylä, p. 59-70 12 p. (The annual conference of Finnish Mathematics and Science Education Research Association, November 8-9, 2012, Jyväskylä, Finland; vol. 90).

Research output: [Chapter in Book/Report/Conference proceeding](#) > [Conference contribution](#) > [Scientific](#) > [peer-review](#)

### **Mean Value Properties for the Weinstein Equation Using the Hyperbolic Metric**

Eriksson, S-L. & Orelma, H., 2013, In : *Complex Analysis and Operator Theory*. 7, 5, p. 1609-1621

Research output: [Contribution to journal](#) > [Article](#) > [Scientific](#) > [peer-review](#)

### **Networks of innovation relationships: multiscopic views on Finland**

Still, K., Huhtamäki, J., Russell, M. G., Basole, R. C., Salonen, J. & Rubens, N., 2013, *XXIV ISPIIM Conference, Innovating in Global Markets: Challenges for Sustainable Growth, 16-19 June 2013, Helsinki, Finland*. Huizingh, K. R. E., Conn, S., Torkkeli, M., Schneider, S. & Bitran, I. (eds.). Manchester, UK: International Society for Professional Innovation Management ISPIIM, p. 1-15 15 p. (International Society for Professional Innovation Management Conference).

Research output: [Chapter in Book/Report/Conference proceeding](#) > [Conference contribution](#) > [Scientific](#) > [peer-review](#)

### **Normal Distributions Transform Occupancy Maps: Application to Large-Scale Online 3D Mapping**

Saarinen, J., Andreasson, H., Stoyanov, T., Ala-Luhtala, J. & Lilienthal, A. J., 2013, *2013 IEEE International conference on Robotics and Automation, ICRA, May 6-10, 2013, Karlsruhe, Germany*. Piscataway, NJ: IEEE, p. 2233-2238 6 p. (IEEE International Conference on Robotics and Automation).

Research output: [Chapter in Book/Report/Conference proceeding](#) > [Conference contribution](#) > [Scientific](#) > [peer-review](#)

### **On Hodge-de Rham systems in hyperbolic Clifford analysis**

Eriksson, S-L. & Orelma, H., 2013, *11th International Conference of Numerical Analysis and Applied Mathematics, ICNAAM 2013, 21-27 September 2013, Rhodes, Greece*. American Institute of Physics AIP, p. 492-495 4 p. (AIP Conference Proceedings; vol. 1558).

Research output: [Chapter in Book/Report/Conference proceeding](#) > [Conference contribution](#) > [Scientific](#) > [peer-review](#)

### **On hypermonogenic functions**

Eriksson, S-L. & Orelma, H., 2013, In : *Complex Variables and Elliptic Equations*. 58, 7, p. 975-990 16 p.

Research output: [Contribution to journal](#) > [Article](#) > [Scientific](#) > [peer-review](#)

### **On the Structure of Robust Controllers for Infinite-Dimensional Systems**

Hämäläinen, T. & Pohjolainen, S., 2013, *12th European Control Conference, ECC 2013, Zürich, Switzerland, 17.-19.7.2013*. Zürich, Sveitsi: European Control Association EUCA, p. 59-62 4 p. (European Control Conference).

Research output: Chapter in Book/Report/Conference proceeding › Conference contribution › Scientific › peer-review

### **Output Regulation Theory for Distributed Parameter Systems with Unbounded Control and Observation**

Paunonen, L. & Pohjolainen, S., 2013, *52nd IEEE Conference on Decision and Control, IEEE CDC 2013, December 10-13, 2013, Florence, Italy*. Piscataway, NJ: IEEE, p. 1083-1088 6 p. (IEEE Conference on Decision and Control).

Research output: Chapter in Book/Report/Conference proceeding › Conference contribution › Scientific › peer-review

### **Particle filter and smoother for indoor localization**

Nurminen, H., Ristimäki, A., Ali-Löytty, S. & Piche, R., 2013, *International Conference on Indoor Positioning and Indoor Navigation, IPIN 2013, 28-31 Oct 2013, Montbéliard-Belfort, France*. Piscataway, NJ: IEEE, p. 137-146 10 p. (International Conference on Indoor Positioning and Indoor Navigation).

Research output: Chapter in Book/Report/Conference proceeding › Conference contribution › Scientific › peer-review

### **Process for Measuring and Visualizing an Open Innovation Platform: Case Demola**

Huhtamäki, J., Luotonen, V., Kairamo, V., Still, K. & Russell, M. G., 2013, *17th International Academic MindTrek Conference, October 1-4, 2013, Tampere, Finland*. ACM, p. 166-171 6 p. (MindTrek Conference).

Research output: Chapter in Book/Report/Conference proceeding › Conference contribution › Scientific › peer-review

### **Rapid Characterisation of Forest Structure from TLS and 3D Modelling**

Burt, A., Disney, M., Raunonen, P., Armston, J., Calders, K. & Lewis, P., 2013, *2013 IEEE International Geoscience & Remote Sensing Symposium, IGARSS 2013, Melbourne, Australia, July 21-26, 2013*. Piscataway, NJ: IEEE, p. 1-4 4 p. (IEEE International Geoscience and Remote Sensing Symposium).

Research output: Chapter in Book/Report/Conference proceeding › Conference contribution › Scientific › peer-review

### **Reduced order internal models in robust output regulation**

Paunonen, L. & Pohjolainen, S., 2013, In : *IEEE Transactions on Automatic Control*. 58, 9, p. 2307-2318 12 p.

Research output: Contribution to journal › Article › Scientific › peer-review

### **Regional compensation for statistical maximum likelihood reconstruction error of PET image pixels**

Forma, J., Niemi, J. A. & Ruotsalainen, U., 2013, In : *Physics in Medicine and Biology*. 58, 14, p. 4849-4864 16 p.

Research output: Contribution to journal › Article › Scientific › peer-review

### **Relational Capital and Social Capital: One or two Fields of Research?**

Still, K., Huhtamäki, J. & Russell, M. G., 2013, *Proceedings of the 10th International Conference on Intellectual Capital, Knowledge Management and Organisational Learning, ICICKM 2013, Washington, DC, USA, October 24-25, 2013*.

Green, A. (ed.). Reading, UK: Academic Conferences and Publishing International Limited, p. 420-428 9 p. (International Conference on Intellectual Capital, Knowledge Management and Organisational Learning; vol. 2).

Research output: Chapter in Book/Report/Conference proceeding › Conference contribution › Scientific › peer-review

### **Robustness of polynomial stability with respect to unbounded perturbations**

Paunonen, L., 2013, In : *Systems and Control Letters*. 62, 4, p. 331-337 7 p.

Research output: Contribution to journal › Article › Scientific › peer-review

### **Robustness properties of controllers with reduced order internal models**

Paunonen, L. & Pohjolainen, S., 2013, *12th European Control Conference, ECC 2013, Zürich, Switzerland, 17.-19.7.2013*. Zürich, Switzerland: European Control Association EUCA, p. 578-583 6 p. (European Control Conference; vol. 12).

Research output: Chapter in Book/Report/Conference proceeding › Conference contribution › Scientific › peer-review

### **Robust output regulation and the preservation of polynomial closed-loop stability**

Paunonen, L. & Pohjolainen, S., 2013, In : *International Journal of Robust and Nonlinear Control*. p. 1-28 28 p.

Research output: Contribution to journal › Article › Scientific › peer-review

### **SO-I: a surrogate model algorithm for expensive nonlinear integer programming problems including global optimization applications**

Müller, J., Shoemaker, C. & Piche, R., 2013, In : *Journal of Global Optimization*. p. 1-25 25 p.

Research output: Contribution to journal › Article › Scientific › peer-review

### **Solvability of the output regulation problem with a feedforward controller**

Laakkonen, P. & Pohjolainen, S., 2013, *12th European Control Conference, ECC 2013, Zürich, Switzerland, 17.-19.7.2013*. Zürich, Sveitsi: European Control Association EUCA, p. 560-565 6 p. (European Control Conference).

Research output: Chapter in Book/Report/Conference proceeding › Conference contribution › Scientific › peer-review

### **SO-MI: A surrogate model algorithm for computationally expensive nonlinear mixed-integer black-box global optimization problems**

Müller, J., Shoemaker, C. & Piche, R., 2013, In : *Computers and Operations Research*. 40, 5, p. 1383-1400

Research output: Contribution to journal › Article › Scientific › peer-review

### **Statistical Path Loss Parameter Estimation and Positioning using RSS Measurements**

Nurminen, H., Talvitie, J., Ali-Löytty, S., Müller, P., Lohan, E-S., Piche, R. & Renfors, M., 2013, In : *Journal of Global Positioning Systems*. 12, 1, p. 13-27 15 p.

Research output: Contribution to journal › Article › Scientific › peer-review

### **Stock Price Dynamics and Option Valuations under Volatility Feedback Effect**

Kanniainen, J. & Piche, R., 2013, In : *Physica A: Statistical Mechanics and Its Applications*. 392, 4, p. 722-740

Research output: Contribution to journal › Article › Scientific › peer-review

### **Structure-Dynamics Relationships in Bursting Neuronal Networks Revealed Using a Prediction Framework**

Mäki-Marttunen, T., Acimovic, J., Linne, M-L. & Ruohonen, K., 2013, In : *PLoS ONE*. 8, 7, p. 1-16 16 p., e69373.

Research output: Contribution to journal › Article › Scientific › peer-review

### **The Asymptotic Behaviour of the Proportion of Hard Instances of the Halting Problem**

Valmari, A., 2013, *SPLST '13, 13th Symposium on Programming Languages and Software Tools, August 26-27, 2013, Szeged, Hungary*. Kiss, A. (ed.). Szeged, Hungary: University of Szeged, p. 170-184 15 p. (Symposium on Programming Languages and Software Tools).

Research output: Chapter in Book/Report/Conference proceeding › Conference contribution › Scientific › peer-review

### **The Kraft Sum as a Monotone Function of the Refinement-Ordered Set of Uniquely Decipherable Codes**

Foldes, S., 2013, In : *Mathematics for Applications*. 2, 1, p. 1-4 4 p.

Research output: Contribution to journal › Article › Scientific › peer-review

### **The Resolved Asteroid Program – Size, shape, and pole of (52) Europa**

Merline, W. J., Drummond, J. D., Carry, B., Conrad, A., Tamblyn, P. M., Dumas, C., Kaasalainen, M., Erikson, A., Mottola, S., Durech, J., Rousseau, G., Behrend, R., Casalnuovo, G. B., Chinaglia, B., Christou, J. C., Chapman, C. R. & Neyman, C., 2013, In : *Icarus*. 225, 1, p. 794-805 12 p.

Research output: Contribution to journal › Article › Scientific › peer-review

### **Tiedonlouhintaa tieliikenneonnettomuussatasta**

Turunen, E., 2013, In : *Liikenne*. 31, 2, p. 7-8 2 p.

Research output: Contribution to journal › Article › Scientific › peer-review

### **Twitteriä ja uutispäivittelyä - toimittajana sosiaalisessa mediassa**

Vainikka, E., Noppari, E., Heinonen, A. & Huhtamäki, J., 2013, Tampereen yliopisto. Viestinnän, median ja teatterin yksikkö. Journalismin, viestinnän ja median tutkimuskeskus, COMET. 113 p.

Research output: Book/Report › Commissioned report › Professional

### **Unimodality and log-concavity of f-vectors for cyclic and ordinary polytopes**

Major, L., 2013, In : *Discrete Applied Mathematics*. 161, 10-11, p. 1669-1672 4 p.

Research output: Contribution to journal › Article › Scientific › peer-review

### **Verkostoanalyysi sosiaalisen median tutkimuksessa**

Huhtamäki, J. & Parviainen, O., 2013, *Otteita verkosta - verkon ja sosiaalisen median tutkimusmenetelmät*. Laaksonen, S-M., Matikainen, J. & Tikka, M. (eds.). 1 ed. Tampere: Vastapaino, p. 245-273 29 p.



Research output: Chapter in Book/Report/Conference proceeding › Chapter › Scientific › peer-review

### **Virtuaalinen konelaboratorio ja semanttinen mallinnus konejärjestelmän suunnittelun tukena, Loppuraportti, Semogen II -hanke**

Nykänen, O., Koskinen, K. T., Ranta, P., Salonen, J., Aaltonen, J., Nurmi, J., Helminen, M., Alarotu, V., Salomaa, T. & Pohjolainen, S., 2013, Tampere: Tampereen teknillinen yliopisto, Smart Simulators -tutkimusryhmä. 50 p.

Research output: Book/Report › Commissioned report › Professional

### **What's out there? Asteroid models for target selection and mission planning**

Kaasalainen, M. & Durech, J., 2013, *Asteroids: prospective energy and material resources*. Badescu, V. (ed.). Heidelberg: Springer, p. 131-150 20 p.

Research output: Chapter in Book/Report/Conference proceeding › Chapter › Scientific › peer-review

### **A review on old and new results on robust regulation of DPS with infinite-dimensional exosystems**

Hämäläinen, T., 4 Jan 2012.

Research output: Other conference contribution › Paper, poster or abstract › Scientific

### **A characterization of level-continuous fuzzy numbers**

Kaleva, O., 2012, In : *Fuzzy Sets and Systems*. 209, p. 84-88

Research output: Contribution to journal › Article › Scientific › peer-review

### **A Molecular Camera Gyroscope**

Huttunen, V. & Piche, R., 2012, In : *Giroskopiya I Navigatsiya*. 77, p. 69-81

Research output: Contribution to journal › Article › Scientific › peer-review

### **A Monocular Camera Gyroscope**

Huttunen, V. & Piche, R., 2012, In : *Gyroscopy and Navigation*. 3, 2, p. 124-131

Research output: Contribution to journal › Article › Scientific › peer-review

### **An Adaptive Derivative Free Method for Bayesian Posterior Approximation**

Raitoharju, M. & Ali-Löytty, S., 2012, In : *IEEE Signal Processing Letters*. 19, 2, p. 87-90 12436433.

Research output: Contribution to journal › Article › Scientific › peer-review

### **Analysis of the rotation period of asteroids (1865) Cerberus, (2100) Ra-Shalom, and (3103) Eger - search for the YORP effect**

Durech, J., Vokrouhlicky, D., Baransky, A. R., Breiter, S., Burkhonov, O. A., Cooney, W., Fuller, V., Gaftonyuk, N. M., Gross, J., Inasaridze, R. Y., Kaasalainen, M., Krugly, Y. N., Kvaratshelia, O. I., Litvinenko, E. A., Macomber, B., Marchis, F., Molotov, I. E., Oey, J., Polishook, D., Pollock, J., Pravec, P., Sarneczky, K., Shevchenko, V. G., Slyusarev, I., Stephens, R., Szabo, G., Terrell, D., Vachier, F., Vanderplate, Z., Viikinkoski, M. & Warner, B. D., 2012, In : *Astronomy and Astrophysics*. 547, p. 9 A10.

Research output: Contribution to journal › Article › Scientific › peer-review

### **Analytics of the impact of user involvement in the innovation process and its outcomes. Case study: Media-Enhanced Learning (MEL) Service**

Still, K., Huhtamäki, J., Isomursu, M., Lahti, J. & Koskela-Huotari, K., 2012, In : *Procedia: Social and Behavioral Sciences*. 46, p. 1740-1746

Research output: Contribution to journal › Article › Scientific › peer-review

### **An empirical solar radiation pressure model for autonomous GNSS orbit prediction**

Ala-Luhtala, J., Seppänen, M. & Piche, R., 2012, *2012 IEEE/ION Position Location and Navigation Symposium PLANS, 23-26 April 2012, Myrtle Beach, SC, USA*. Piscataway, NJ: Institute of Electrical and Electronics Engineers IEEE, p. 568-575 12863831. (IEEE/ION Position Location and Navigation Symposium).

Research output: Chapter in Book/Report/Conference proceeding › Conference contribution › Scientific › peer-review

### **A New Characterization for n-Fold Positive Implicative BL-logics**

Turunen, E., Tchikapa, N. & Lele, C., 2012, *Advances on Computational Intelligence 14th International Conference on Information Processing and Management of Uncertainty in Knowledge-Based Systems, IPMU 2012, Catania, Italy, July 9-*

13, 2012. *Proceedings, Part I. Communications in Computer and Information Science*. Greco, S., Bouchon-Meunier, B., Coletti, G., Fedrizzi, M., Matarazzo, B. & Yager, R. R. (eds.). Berlin Heidelberg: Springer, p. 552-560 (International Conference on Information Processing and Management of Uncertainty in Knowledge-Based Systems; vol. 297).  
Research output: Chapter in Book/Report/Conference proceeding > Conference contribution > Scientific > peer-review

#### **A New Method and Format for Describing CANopen System Topology**

Helminen, M., Salonen, J., Saha, H., Nykänen, O., Koskinen, K. T., Ranta, P. & Pohjolainen, S., 2012, *Proceedings of the 13th International CAN Conference, iCC 2012 in Hambach Castle, March 5 to March 6, Germany*. CAN in Automation e.V., p. 1-8 8 p. (International CAN Conference).  
Research output: Chapter in Book/Report/Conference proceeding > Conference contribution > Scientific

#### **Asteroid (2867) Steins: Shape, topography and global physical properties from OSIRIS observations**

Jorda, L., Lamy, P., Gaskell, R., Kaasalainen, M., Groussin, O., Besse, S. & Faury, G., 2012, In : *Icarus*. 221, 2, p. 1089-1100  
Research output: Contribution to journal > Article > Scientific > peer-review

#### **A Stochastic Mixture Surrogate Model Algorithm for Computationally Expensive Black-Box Global Optimization Problems**

Müller, J., Shoemaker, C. & Piche, R., 2012, *Proceedings of Global Optimization Workshop 2012, 26-29 June 2012, Natal, Brazil*. Natal, Brazil: Universidade Federal do Rio Grande do Norte, p. 1-4 4 p. (Global Optimization Workshop).  
Research output: Chapter in Book/Report/Conference proceeding > Conference contribution > Scientific

#### **Asymptotic modeling of unconstrained control of a tethered power kite moving along a given closed-loop spherical trajectory**

Silvennoinen, R. & Argatov, I., 2012, In : *Journal of Engineering Mathematics*. 72, 1, p. 187-203  
Research output: Contribution to journal > Article > Scientific > peer-review

#### **Autonomous Prediction of GPS and GLONASS Satellite Orbits**

Seppänen, M., Ala-Luhtala, J., Piche, R., Martikainen, S. & Ali-Löyty, S., 2012, In : *Navigation*. 59, 2, p. 119-134  
Research output: Contribution to journal > Article > Scientific > peer-review

#### **Characterizing n-Fold Positive Implicative BL-logics**

Turunen, E., Lele, C. & Tchikapa, N., 2012, *ManyVal'12 In Honour of Antonio Di Nola's 65th Birthday, Salerno, Italy, 4.7.7.2012*. p. 60-64 (ManyVal).  
Research output: Chapter in Book/Report/Conference proceeding > Conference contribution > Scientific

#### **Comprehensive Quantitative Tree Models from TLS Data**

Åkerblom, M., Raunonen, P., Kaasalainen, M., Kaasalainen, S. & Kaartinen, H., 2012, *IEEE International Geoscience and Remote Sensing Symposium, IGARSS, 2012, 22.-27.7.2012, Munich, Germany*. Piscataway, NJ: Institute of Electrical and Electronics Engineers IEEE, p. 6507-6510 13133382. (IEEE International Geoscience and Remote Sensing Symposium).  
Research output: Chapter in Book/Report/Conference proceeding > Conference contribution > Scientific > peer-review

#### **Dual Look at Robust Regulation: Frequency Domain and State Space Approaches**

Laakkonen, P., Paunonen, L. & Pohjolainen, S., 2012, *Proceedings of MMAR 2012. 17th International Conference on Methods and Models in Automation & Robotics, MMAR 2012, 27-30 August 2012, Miedzyzdroje, Poland*. Piscataway, NJ: Institute of Electrical and Electronics Engineers IEEE, p. 136-141 13117991. (International Conference on Methods and Models in Automation & Robotics).  
Research output: Chapter in Book/Report/Conference proceeding > Conference contribution > Scientific > peer-review

#### **Elementary Partial Differential Equations. Theory and Solved Problems.**

Piche, R., 2012, Saarbrücken, Germany: Lambert Academic Publishing. 131 p.  
Research output: Book/Report > Book > Scientific > peer-review

#### **Estimation of Linear Systems with Abrupt Changes of the Noise Covariances Using Variational Bayes Algorithm**

Pesonen, H. & Piche, R., 2012, Tampere: Tampere University of Technology, Department of Mathematics. 4 p. (Tampereen teknillinen yliopisto. Matematiikan laitos. Tutkimusraportti; vol. 100)  
Research output: Book/Report > Commissioned report > Professional

### **Facilitating active participation in web-based co-development**

Friedrich, P., Huhtamäki, J., Koskela-Huotari, K., Karppinen, K. & Still, K., 2012, *Proceedings of Innovation through Social Media, ISM 2012 workshop proceedings, December 3, 2012, Oslo, Norway*. Trondheim, Norway: AKADEMIKA FORLAG, p. 16-23 (Innovation Through Social Media).

Research output: Chapter in Book/Report/Conference proceeding > Conference contribution > Scientific > peer-review

### **Feedforward Output Regulation for Distributed Parameter Systems with Infinite-Dimensional Exosystems**

Paunonen, L. & Pohjolainen, S., 2012, *Proceedings of the 51st IEEE Conference on Decision and Control, IEEE CDC 2012, December 10-13 2012, Maui, Hawaii, USA*. Piscataway, NJ: IEEE, p. 1566-1571 (IEEE Conference on Decision and Control).

Research output: Chapter in Book/Report/Conference proceeding > Conference contribution > Scientific > peer-review

### **Gaussian mixture filter allowing negative weights and its application to positioning using signal strength measurements**

Muller, P., Ali-Löytty, S., Dashti, M., Nurminen, H. & Piche, R., 2012, *Proceedings of WPNC 2012, 9th Workshop on Positioning, Navigation and Communication, March 15-16, 2012, Dresden, Germany*. Piscataway, NJ: Institute of Electrical and Electronics Engineers IEEE, p. 71-76 (Workshop on Positioning, Navigation and Communication).

Research output: Chapter in Book/Report/Conference proceeding > Conference contribution > Scientific > peer-review

### **Harmonic Forms on Conformal Euclidean Manifolds: The Clifford Multivector Approach**

Orelma, H., 2012, In : *Advances in Applied Clifford Algebras*. 22, 1, p. 143-158

Research output: Contribution to journal > Article > Scientific > peer-review

### **Hierarchical Bayesian inference for the EEG inverse problem using realistic FE head models: Depth localization and source separation for focal primary currents**

Lucka, F., Pursiainen, S., Burger, M. & Wolters, C. H., 2012, In : *NeuroImage*. 61, 4, p. 1364-1382

Research output: Contribution to journal > Article > Scientific > peer-review

### **Hyperbolic laplace operator and the Weinstein equation in R3**

Eriksson, S-L. & Orelma, H., 2012, *Proceedings in the 19th International Conference on the Applications of Computer Science and Mathematics in Architecture and Civil Engineering, IKM 2012, July 4-6 2012, Weimar, Germany*. Gürlebeck, K., Lahmer, T. & Werner, F. (eds.). Weimar, Germany: IKM, p. 15 (International conference on the applications of computer science and mathematics in architecture and civil engineering).

Research output: Chapter in Book/Report/Conference proceeding > Conference contribution > Scientific > peer-review

### **Mathematics Remedial Instruction with Math-Bridge e-learning system**

Kangas, J., Miilumäki, T. & Pohjolainen, S., 2012, *16th SEFI MWG Seminar - Mathematical Education of Engineers, Salamanca, Spain, 28.-30.6.2012*. Alpers, B., Robinson, C., Rodriguez, G., Martin, A. & de la Villa, A. (eds.). Salamanca, Spain: Universidad de Salamanca, (SEFI MWG Seminar).

Research output: Chapter in Book/Report/Conference proceeding > Conference contribution > Scientific > peer-review

### **Method of tracking a state of a mobile electronic device**

Sirola, N. & Ali-Löytty, S., 2012, Patent No. Pat. US 8213956 B2, Priority date 3 Jul 2012, Priority No. (21)12/224767 ;12/224,767

Research output: Patent > Scientific

### **Mobile Tracking in Mixed Line-of-Sight/Non-Line-of-Sight Conditions: Algorithm and Theoretical Lower Bound**

Chen, L., Ali-Löytty, S., Piche, R. & Wu, L., 2012, In : *WIRELESS PERSONAL COMMUNICATIONS*. 65, 4, p. 753-771

Research output: Contribution to journal > Article > Scientific > peer-review

### **Networks of Growth: Case Young Innovative Companies in Finland**

Huhtamäki, J., Still, K., Isomursu, M., Russell, M. G. & Rubens, N., 2012, *Proceedings of the 7th European Conference on Innovation and Entrepreneurship, September 20-21, 2012, Santarem, Portugal*. Vivas, C. & Lucas, F. (eds.). Reading, UK: Academic Publishing International Limited, (European Conference on Innovation and Entrepreneurship).

Research output: Chapter in Book/Report/Conference proceeding > Conference contribution > Scientific > peer-review

### **n-Fold implicative basic logic is Gödel logic**

Turunen, E., Tchikapa, N. & Lele, C., 2012, In : *Soft Computing*. 16, 1, p. 177-181  
Research output: Contribution to journal › Article › Scientific › peer-review

### **Nonlinear iteration semigroups of fuzzy Cauchy problems**

Kaleva, O., 2012, In : *Fuzzy Sets and Systems*. 209, p. 104-110 7 p.  
Research output: Contribution to journal › Article › Scientific › peer-review

### **On the Parametric Instability Caused by Step Size Variation in Runge-Kutta-Nyström Methods**

Piche, R., 2012, Unknown Publisher. 11 p. (arXiv; vol. arXiv:1209.5173)  
Research output: Book/Report › Commissioned report › Professional

### **Optimal computation of brightness integrals parametrized on the unit sphere**

Kaasalainen, M., Lu, X. & Vänttinen, A-V., 2012, In : *Astronomy and Astrophysics*. 539, p. 7 A96.  
Research output: Contribution to journal › Article › Scientific › peer-review

### **Outlier-robust estimation of GPS satellite clock offsets**

Martikainen, S., Piche, R. & Ali-Löytty, S., 2012, *2012 International Conference on Localization and GNSS ICL-GNSS, June 25-27, 2012, Starnberg, Germany*. Piscataway, NJ: Institute of Electrical and Electronics Engineers IEEE, p. 5 pp. 12906184. (2012 International Conference on Localization and GNSS).  
Research output: Chapter in Book/Report/Conference proceeding › Conference contribution › Scientific › peer-review

### **Output Regulation for General Infinite-Dimensional Exosystems**

Paunonen, L. & Pohjolainen, S., 2012, *Proceedings of the 7th IFAC Symposium on Robust Control Design, Rocond 2012, 20-22 June 2012, Aalborg, Denmark*. Laxenburg, Austria: International Federation of Automatic Control IFAC, p. 162-167 (IFAC Symposium on Robust Control Design).  
Research output: Chapter in Book/Report/Conference proceeding › Conference contribution › Scientific › peer-review

### **Paradigm shift in innovation indicators - from analog to digital**

Still, K., Huhtamäki, J., Russell, M. G. & Rubens, N., 2012, *Proceedings of the 5th ISPIM Innovation Forum, 9-12 December, 2012, Seoul, Korea*. Manchester, UK: International Society for Professional Innovation Management ISPIM, (ISPIM Innovation Symposium).  
Research output: Chapter in Book/Report/Conference proceeding › Conference contribution › Scientific › peer-review

### **Periodic Output Regulation for Distributed Parameter Systems**

Paunonen, L. & Pohjolainen, S., 2012, In : *Mathematics of Control Signals and Systems*. 24, 4, p. 403-441  
Research output: Contribution to journal › Article › Scientific › peer-review

### **Prime filters on residuated lattices**

Kondo, M. & Turunen, E., 2012, *2012 IEEE 42nd International Symposium on Multiple-Valued Logic ISMVL, 14-16 May, 2012, Victoria, British Columbia, Canada*. Piscataway, NJ: Institute of Electrical and Electronics Engineers IEEE, p. 89-91 (IEEE International Symposium on Multiple-Valued Logic).  
Research output: Chapter in Book/Report/Conference proceeding › Conference contribution › Scientific › peer-review

### **Raviart-Thomas-type sources adapted to applied EEG and MEG: Implementation and results**

Pursiainen, S., 2012, In : *Inverse Problems*. 28, 6, 065013.  
Research output: Contribution to journal › Article › Scientific › peer-review

### **Robust Kalman filter for positioning with wireless BS coverage areas**

Dashti, M., Ali-Löytty, S., Wirola, L., Müller, P., Nurminen, H. & Piche, R., 2012, *Proceedings of WPNC 2012, 9th Workshop on Positioning, Navigation and Communication, March 15-16, 2012, Dresden, Germany*. Piscataway, NJ: Institute of Electrical and Electronics Engineers IEEE, p. 83-88 (Workshop on Positioning, Navigation and Communication).  
Research output: Chapter in Book/Report/Conference proceeding › Conference contribution › Scientific › peer-review

### **Robustness of strongly and polynomially stable semigroups**

Paunonen, L., 2012, In : *Journal of Functional Analysis*. 263, 9, p. 2555-2583

Research output: Contribution to journal › Article › Scientific › peer-review

### **Robust regulation: From state-space to frequency domain**

Laakkonen, P., 2012, *Digest of TISE Seminar 2012, Nokia, Finland, 14 June, 2012. TISE Publications*. Niemistö, A. (ed.). Tampere: Tampere Graduate School in Information Science and Engineering (TISE). Tampere University of Technology, University of Tampere, p. 135-140 (TISE Seminar; vol. 11).

Research output: Chapter in Book/Report/Conference proceeding › Conference contribution › Scientific

### **Robust Regulation of Distributed Parameter Systems with Infinite-Dimensional Exosystems**

Hämäläinen, T. & Pohjolainen, S., 2012, *The 51st IEEE Conference on Decision and Control, IEEE CDC 2012, December 10-13 2012, Maui, Hawaii, USA*. Piscataway, NJ: Institute of Electrical and Electronics Engineers IEEE, p. 3514-3519 (IEEE Conference on Decision and Control).

Research output: Chapter in Book/Report/Conference proceeding › Conference contribution › Scientific › peer-review

### **Shape modeling technique KOALA validated by ESA Rosetta at (21) Lutetia**

Carry, B., Kaasalainen, M., Merline, W. J., Muller, T. G., Jorda, L., Drummond, J. D., Berthier, J., O'Rourke, L., Durech, J., Küppers, M., Conrad, A., Tamblyn, P., Dumas, C. & Sierks, H., 2012, In : *Planetary and Space Science*. 66, 1, p. 200-212

Research output: Contribution to journal › Article › Scientific › peer-review

### **Shape reconstruction of irregular bodies with multiple complementary data sources**

Kaasalainen, M. & Viikinkoski, M., 2012, In : *Astronomy and Astrophysics*. 543, p. 9 A97.

Research output: Contribution to journal › Article › Scientific › peer-review

### **Sosiaalisesta mediasta dataa innovaatiotoiminnan ymmärtämiseen ja mittaamiseen**

Still, K., Huhtamäki, J., Russell, M. G., Koskela-Huotari, K., Isomursu, M. & Pohjolainen, S., 2012, *Tekes*. 7 p. (Tekes Policy Brief; vol. 2)

Research output: Book/Report › Commissioned report › Professional

### **Stress-strain behavior of polyamide 6 staple fibers of punch-needed press felts under simulated wet-pressing conditions**

Hakala, T., Kaleva, O. & Harlin, A., 2012, In : *Journal of the Textile Institute*. 103, 12, p. 1280-1293

Research output: Contribution to journal › Article › Scientific › peer-review

### **Suomessa 2004-2008 sattuneiden tieliikenneonnettomuuksien analysointia GUHA-tiedonlouhintamenetelmällä**

Järvenpää, M. & Turunen, E., 2012, Tampere: Tampereen teknillinen yliopisto. Matematiikan laitos. 32 p. (Tampereen teknillinen yliopisto. Matematiikan laitos. Tutkimusraportti; vol. 99)

Research output: Book/Report › Commissioned report › Professional

### **Surrogate Model Optimization Toolbox: Matlab central file exchange**

Müller, J., 2012

Research output: Artistic and non-textual form › Software › Scientific

### **Testing a New Vegetation Structure Retrieval Algorithm from Terrestrial Lidar Scanner Data Using 3D Models**

Disney, M., Lewis, P. & Raunonen, P., 2012, *Silvilaser 2012, 12th International Conference on LiDAR Applications for Assessing Forest Ecosystems, 16-19 September 2012, Vancouver, Canada*. Vancouver, Canada: Silvilaser Vancouver 2012, p. 1-9 9 p. (Silvilaser).

Research output: Chapter in Book/Report/Conference proceeding › Conference contribution › Scientific › peer-review

### **The Infinite-Dimensional Sylvester Differential Equation and Periodic Output Regulation**

Paunonen, L., 2012, *Spectral Theory, Mathematical System Theory, Evolution Equations, Differential and Difference Equations. 21st International Workshop on Operator Theory and Applications, Berlin, July 2010. Operator Theory: Advances and Applications.. Arendt, W., Ball, J. A., Behrndt, J., Förster, K-H., Mehrmann, V. & Trunk, C. (eds.)*. Basel, Switzerland: Springer Basel, p. 515-531 (International Workshop on Operator Theory and Applications; vol. 221).

Research output: Chapter in Book/Report/Conference proceeding › Conference contribution › Scientific › peer-review

### **Transforming Innovation Ecosystems Through Network Orchestration: Case EIT ICT Labs**

Still, K., Huhtamäki, J., Russell, M. G. & Rubens, N., 2012, *Proceedings of the XXIII ISPIM Conference. Action for Innovation: Innovating from Experience, Barcelona, Spain, 17-20 June 2012*. Huizingh, K. R. E., Conn, S., Torkkeli, M. & Bitran, I. (eds.). Manchester, UK: International Society for Professional Innovation Management ISPIM, (International Society for Professional Innovation Conference).

Research output: Chapter in Book/Report/Conference proceeding › Conference contribution › Scientific › peer-review

### **Understanding Mobile Ecosystem Dynamics: a Data-Driven Approach**

Basole, R. C., Russell, M. G., Huhtamäki, J. & Rubens, N., 2012, *Mobile Business in Everyday life: users' routines versus provider's turbulence. Proceedings of the 11th International Conference on Mobile Business, ICMB 2012, June 21-22, 2012, Delft, Netherlands*. Delft, The Netherlands: Delft University of Technology, p. 17-28 (International Conference on Mobile Business).

Research output: Chapter in Book/Report/Conference proceeding › Conference contribution › Scientific › peer-review

### **User Guide for Modularized Surrogate Model Toolbox**

Müller, J., 2012, Tampere: Tampere University of Technology. 28 p. (TUT DPub)

Research output: Book/Report › Commissioned report › Professional

### **Using unlocated fingerprints in generation of WLAN maps for indoor positioning**

Raitoharju, M., Fadjuhoff, T., Ali-Löytty, S. & Piche, R., 2012, *2012 IEEE/ION Position Location and Navigation Symposium PLANS, 23-26 April 2012, Myrtle Beach, SC, USA*. Piscataway, NJ: Institute of Electrical and Electronics Engineers IEEE, p. 576-583 12863832. (IEEE/ION Position Location and Navigation Symposium).

Research output: Chapter in Book/Report/Conference proceeding › Conference contribution › Scientific › peer-review

### **Output Regulation Theory for Linear Systems with Infinite-Dimensional and Periodic Exosystems**

Paunonen, L., 4 Nov 2011, Tampere: Tampere University of Technology. (Tampere University of Technology. Publication; vol. 992)

Research output: Book/Report › Doctoral thesis › Monograph

### **Absolute radiometric calibration of ALS intensity data: Effects on accuracy and target classification**

Kaasalainen, S., Pyysalo, U., Krooks, A., Vain, A., Kukko, A., Hyypä, J. & Kaasalainen, M., 2011, In : *Sensors*. 11, 11, p. 10586-10602

Research output: Contribution to journal › Article › Scientific › peer-review

### **A differential form approach to Dirac operators on surfaces**

Orelma, H. & Sommen, F., 2011, *Hypercomplex Analysis and Applications. Trends in Mathematics*. Sabadini, I. & Sommen, F. (eds.). Basel: Birkhäuser, p. 213-232

Research output: Chapter in Book/Report/Conference proceeding › Chapter › Scientific › peer-review

### **Advances in Augmented Reality Technologies**

Pylvänäinen, T., 2011, Tampere: Tampere University of Technology. 183 p. (Tampere University of Technology. Publication; vol. 975)

Research output: Book/Report › Doctoral thesis › Collection of Articles

### **A Framework for Bayesian Receiver Autonomous Integrity Monitoring in Urban Navigation**

Pesonen, H., 2011, In : *Navigation*. 58, 3, p. 229-240

Research output: Contribution to journal › Article › Scientific › peer-review

### **A hyperbolic interpretation of Cauchy-type kernels in hyperbolic function theory in hypercomplex analysis**

Eriksson, S-L. & Orelma, H., 2011, *Hypercomplex Analysis and Applications. Trends in Mathematics*. Sabadini, I. & Sommen, F. (eds.). Basel: Birkhäuser, p. 43-59

Research output: Chapter in Book/Report/Conference proceeding › Chapter › Scientific › peer-review

### **Alumni Network Analysis**

Rubens, N., Russell, M. G., Perez, R., Huhtamäki, J., Still, K., Kaplan, D. & Okamoto, T., 2011, *2011 IEEE 2nd Global Engineering Education Conference EDUCON, 4-6 April 2011, Amman, Jordan*. Piscataway, NJ: IEEE, p. 606-611 (IEEE Global Engineering Education Conference EDUCON).

Research output: Chapter in Book/Report/Conference proceeding › Conference contribution › Scientific › peer-review

### **A Mean-Value Theorem for Some Eigenfunctions of the Laplace -Beltrami Operator on the Upper-Half Space**

Eriksson, S-L. & Orelma, H., 2011, In : *Annales Academiae Scientiarum Fennicae-Mathematica*. 36, p. 101-110 10 p.

Research output: Contribution to journal › Article › Scientific › peer-review

### **A method of tracking a state of a mobile electronic device**

Sirola, N. & Ali-Löytty, S., 2011, Patent No. Pat. KR 101106276, Priority date 18 Jan 2012, Priority No. 10-2008-7024373

Research output: Patent › Scientific

### **A Monocular Camera Gyroscope**

Huttunen, V. & Piche, R., 2011, Tampere: Tampereen teknillinen yliopisto. 16 p. (Tampereen teknillinen yliopisto.

Matematiikan laitos. Tutkimusraportti; vol. 98)

Research output: Book/Report › Commissioned report › Professional

### **Analysis of Incidence Angle and Distance Effects on Terrestrial Laser Scanner Intensity: Search for Correction Methods**

Kaasalainen, S., Jaakkola, A., Kaasalainen, M., Krooks, A. & Kukko, A., 2011, In : *Remote Sensing*. 3, 10, p. 2207-2221

Research output: Contribution to journal › Article › Scientific › peer-review

### **A Network-Centric Snapshot of Value Co-Creation in Finnish Innovation Financing**

Huhtamäki, J., Russell, M. G., Still, K. & Rubens, N., 2011, *EBRF 2010, Research Forum to Understand Business in Knowledge Society, September 15-17, 2010, Nokia, Finland*. Seppä, M., Helander, N. & Ilvonen, I. (eds.). Nokia: GVL Finland, p. 1-15 15 p. (Research Forum to Understand Business in Knowledge Society EBRF).

Research output: Chapter in Book/Report/Conference proceeding › Conference contribution › Scientific › peer-review

### **A Network-Centric Snapshot of Value Co-Creation in Finnish Innovation Financing**

Huhtamäki, J., Russell, M. G., Still, K. & Rubens, N., 2011, *The Open Source Business Resource*. McPhee, C., Seppä, M. & Tanev, S. (eds.). Talent First Network, p. 13-21

Research output: Chapter in Book/Report/Conference proceeding › Chapter › Scientific › peer-review

### **An implementation of a semantic, web-based virtual machine laboratory prototyping environment**

Salonen, J., Nykänen, O., Ranta, P., Nurmi, J., Helminen, M., Rokala, M., Palonen, T., Alarotu, V., Koskinen, K. & Pohjolainen, S., 2011, In : *Lecture Notes in Computer Science*. 7032, p. 221-236

Research output: Contribution to journal › Article › Scientific › peer-review

### **Apparent wind load effects on the tether of a kite power generator**

Argatov, I., Rautakorpi, P. & Silvennoinen, R., 2011, In : *Journal of Wind Engineering and Industrial Aerodynamics*. 99, 10, p. 1079-1088

Research output: Contribution to journal › Article › Scientific › peer-review

### **Approximation of Volume and Branch Size Distribution of Trees from Laser Scanner Data**

Raunonen, P., Kaasalainen, S., Kaasalainen, M. & Kaartinen, H., 2011, *International Archives of the Photogrammetry, Remote Sensing and Spatial Information Sciences, ISPRS Workshop Laser Scanning, 2011, 29.-31.8.2011, Calgary, Canada*. Calgary: ISPRS, p. 1-6 6 p. (ISPRS Workshop Laser Scanning; vol. 38-5/W12).

Research output: Chapter in Book/Report/Conference proceeding › Conference contribution › Scientific › peer-review

### **A Self-Tuning Robust Regulator for Infinite-Dimensional Systems**

Hämäläinen, T. & Pohjolainen, S., 2011, In : *IEEE Transactions on Automatic Control*. 56, 9, p. 2116-2127

Research output: Contribution to journal › Article › Scientific › peer-review

### **Autonomous satellite orbit prediction**

Seppänen, M., 2011, *Digest of TISE Seminar 2011. TISE publications*. Niemistö, A. (ed.). Tampere: Tampere Graduate School in Information Science and Engineering (TISE). Tampere University of Technology, p. 5-10 (TISE Seminar; vol. 10).

Research output: Chapter in Book/Report/Conference proceeding › Conference contribution › Scientific

### **Autonomous satellite orbit prediction**

Seppänen, M., Perälä, T. & Piche, R., 2011, *Proceedings of The Institute of Navigation 2011 International Technical Meeting, January 24-26, 2011, San Diego, CA, USA*. San Diego, CA: The Institute of Navigation, p. 554-564 (Institute of Navigation International Technical Meeting).

Research output: Chapter in Book/Report/Conference proceeding › Conference contribution › Scientific

### **Axiomatic Extensions of Hohle's Monoidal Logic**

Turunen, E., 2011, *Proceedings of the 7th conference of the European Society for Fuzzy Logic and Technology EUSFLAT-LFA 2011, Aix-Les-Bains, France, 18 - 22 July 2011*. Amsterdam: Atlantis Press, p. 163-168 (Conference of the European Society for Fuzzy Logic and Technology EUSFLAT-LFA).

Research output: Chapter in Book/Report/Conference proceeding › Conference contribution › Scientific › peer-review

### **Bayesian Positioning Using Gaussian Mixture Models with Time-varying Component Weights**

Pesonen, H. & Piche, R., 2011, *JSM 2011 Joint Statistical Meetings 2011, Miami Beach, Florida, USA, July 30-August 4, 2011*. Miami Beach, FL: American Statistical Association, p. 4516-4524 (Joint Statistical Meetings JSM).

Research output: Chapter in Book/Report/Conference proceeding › Conference contribution › Scientific

### **Business Angels and Investment Organizations as Networked Co-creators of the Finnish Innovation Ecosystem**

Huhtamäki, J., Russell, M. G., Still, K., Rubens, N. & Yu, J. C., 2011, *Proceedings of the Triple Helix IX International Conference: Silicon Valley: Global Model or Unique Anomaly? 11-14 July, 2011, Stanford, California, USA*. Stanford, CA: Stanford University, H-STAR Institute Center for Innovation and Communication, p. 1-15 15 p. (Triple Helix International Conference).

Research output: Chapter in Book/Report/Conference proceeding › Conference contribution › Scientific › peer-review

### **Combining asteroid models derived by lightcurve inversion with asteroidal occultation silhouettes**

Durech, J., Kaasalainen, M., Herald, D., Dunham, D., Timerson, B., Hanus, J., Frappa, E., Talbot, J., Hayamizu, T., Warener, B. D., Pilcher, F. & Galad, A., 2011, In : *Icarus*. 214, 2, p. 652-670

Research output: Contribution to journal › Article › Scientific › peer-review

### **Commutative bounded integral residuated orthomodular lattices are Boolean algebras**

Tlادlec, J. & Turunen, E., 2011, In : *Soft Computing*. 15, 4, p. 635-636

Research output: Contribution to journal › Article › Scientific › peer-review

### **Computational study of noise in a large signal transduction network**

Intosalmi, J., Manninen, T., Ruohonen, K. & Linne, M-L., 2011, In : *BMC Bioinformatics*. 12, p. 1-8 8 p., 252.

Research output: Contribution to journal › Article › Scientific › peer-review

### **Dimensional Reduction of Electromagnetic Boundary Value Problems**

Raumonen, P., Suuriniemi, S. & Kettunen, L., 2011, In : *Boundary Value Problems*. 2011, p. 1-25 25 p., 9.

Research output: Contribution to journal › Article › Scientific › peer-review

### **Directed structure at infinity for infinite-dimensional systems**

Laakkonen, P. & Pohjolainen, S., 2011, In : *International Journal of Control*. 84, 4, p. 702-715

Research output: Contribution to journal › Article › Scientific › peer-review

### **Discrete maximum principles for FE solutions of nonstationary diffusion-reaction problems with mixed boundary conditions**

Farago, I., Horvath, R. & Korotov, S., 2011, In : *Numerical Methods for Partial Differential Equations*. 27, 3, p. 702-720

Research output: Contribution to journal › Article › Scientific › peer-review

### **Explaining innovation with indicators of mobility and networks: Insights into central innovation nodes in Europe**

Still, K., Russell, M. G., Huhtamäki, J., Turpeinen, M. & Rubens, N., 2011, *Proceedings of the Triple Helix IX International Conference: Silicon Valley: Global Model or Unique Anomaly? 11-14 July, 2011, Stanford, California, USA*. Stanford, CA: Stanford University, H-STAR Institute Center for Innovation and Communication, p. 1-17 17 p. (Triple Helix International Conference).

Research output: Chapter in Book/Report/Conference proceeding › Conference contribution › Scientific › peer-review



### **Forecasting the diffusion of innovation: A stochastic bass model with log-normal and mean-reverting error process**

Kanniainen, J., Mäkinen, S., Piche, R. & Chakrabarti, A., 2011, In : IEEE Transactions on Engineering Management. 99, p. 1-22 22 p.

Research output: Contribution to journal > Article > Scientific > peer-review

### **Gender and Innovation: Networks of Executive Women in Technology-Based Companies**

Still, K., Russell, M. G., Huhtamäki, J., Yu, J. C. & Rubens, N., 2011, *Proceedings of the Triple Helix IX International Conference: Silicon Valley: Global Model or Unique Anomaly? 11-14 July, 2011, Stanford, California, USA*. Stanford, CA: Stanford University, H-STAR Institute Center for Innovation and Communication, p. 1-20 20 p. (Triple Helix International Conference).

Research output: Chapter in Book/Report/Conference proceeding > Conference contribution > Scientific > peer-review

### **Images of asteroid 21 Lutetia: A remnant planetesimal from the early solar system**

Sierks, H., Lamy, P., Barbieri, C., Koschny, D., Rickman, H., Rodrigo, R., A'Hearn, M. F., Angrilli, F., Barucci, M. A., Bertaux, J.-L., Bertini, I., Besse, S., Carry, B., Cremonese, G., Da Deppo, V., Davidsson, B., Debei, S., De Cecco, M., De Leon, J., Ferri, F., Fornasier, S., Fulle, M., Hviid, S. F., Gaskell, R. W., Groussin, O., Gutierrez, P., Ip, W., Jorda, L., Kaasalainen, M., Keller, H. U., Knollenberg, J., Kramm, R., Kühr, E., Küppers, M., Lara, L., Lazzarin, M., Leyrat, C., Lopez Moreno, J. J., Magrin, S., Marchi, S., Marzari, F., Massironi, M., Michalik, H., Moissl, R., Naletto, G., Preusker, F., Sabau, L., Sabolo, W., Scholten, F., Snodgrass, C., Thomas, N., Tubiana, C., Vernazza, P., Vincent, J.-B., Wenzel, K.-P., Andert, T., Pätzold, M. & Weiss, B. P., 2011, In : Science. 334, 6055, p. 487-490

Research output: Contribution to journal > Article > Scientific > peer-review

### **Information Diversity in Structure and Dynamics of Simulated Neuronal Networks**

Mäki-Marttunen, T., Acimovic, J., Nykter, M., Kesseli, J., Ruohonen, K., Yli-Harja, O. & Linne, M.-L., 2011, In : Frontiers in Computational Neuroscience. 5, p. 1-17 17 p., 26.

Research output: Contribution to journal > Article > Scientific > peer-review

### **Invertibility and Dedekind finiteness in structural matrix rings**

Foldes, S., Szgeti, J. & van Wyk, L., 2011, In : Linear and Multilinear Algebra. 59, 2, p. 221-227

Research output: Contribution to journal > Article > Scientific > peer-review

### **Korkeakoulumatematiikka teekkarin kompastuskivenä?**

Silius, K., Pohjolainen, S., Miilumäki, T., Kangas, J. & Joutsenlahti, J., 2011, *Korkeajännityksiä - kohti osallisuutta luovaa korkeakoulutusta*. Mäkinen, M., Korhonen, V., Annala, J., Kalli, P., Svärd, P. & Värri, V.-M. (eds.). Tampere: Tampere University Press, p. 242-265

Research output: Chapter in Book/Report/Conference proceeding > Chapter > Scientific > peer-review

### **Learner Control and Responsibility: Expanding the Concept of Self-direction in Higher Education**

Väljataga, T., 2011, Tampere: Tampere University of Technology. 167 p. (Tampere University of Technology. Publication; vol. 946)

Research output: Book/Report > Doctoral thesis > Collection of Articles

### **Linear Equation Solvers: Comparison of LU Decomposition and a Robust ODE Solver**

Pohjolainen, S. & Nortunen, H., 2011, *Proceedings of CAO2011 ECCOMAS Thematic Conference on Computational Analysis and Optimization, Jyväskylä, Finland, 9.6.-11.6.2011. Reports of the Department of Mathematical Information Technology. Series A Collections*. Repin, S., Tiihonen, T. & Tuovinen, T. (eds.). Jyväskylä: University of Jyväskylä, p. 77-80 (CAO ECCOMAS Thematic Conference on Computational Analysis and Optimization; no. 1/2011).

Research output: Chapter in Book/Report/Conference proceeding > Conference contribution > Scientific > peer-review

### **Maaliskuun puheenvaihe: Mielenkiintoista matematiikkaa opetukseen LUMA-sanomat**

Eriksson, S.-L., 2011, In : LUMA-sanomat. Maaliskuu, p. 1-3 3 p.

Research output: Contribution to journal > Article > General public

### **Matematiikkaklinikka**

Kangas, J., 2011, *Oppaiden opas - vinkkejä opetukseen opintopolun eri vaiheissa. Aalto-yliopiston julkaisusarja Tiede + Teknologia*. Myller, E. (ed.). Helsinki: Aalto-yliopisto, p. 56-60

Research output: Chapter in Book/Report/Conference proceeding › Chapter › Professional

### **Math-Bridge - Eurooppalainen silta lukio- ja korkeakoulumatematiikan välille**

Miilumäki, T., Pohjolainen, S., Silius, K., Nykänen, O. & Kangas, J., 2011, *ITK 2011, Interaktiivinen Tekniikka Koulutuksessa -konferenssi 2011 - Uutuuden viehätystä, ideoiden kierrätystä, Hämeenlinna, 6.-8.4.2011. Hämeen kesäyliopiston julkaisuja. Sarja B. Leinamo, S. & Salo, H. (eds.). Hämeenlinna: Hämeen kesäyliopisto, p. 70-71 (ITK Interaktiivinen Tekniikka Koulutuksessa -konferenssi).*

Research output: Chapter in Book/Report/Conference proceeding › Conference contribution › Scientific › peer-review

### **Mean value properties for K-hypermonogenic functions**

Eriksson, S.-L. & Orelma, H., 2011, *9th International Conference on Clifford Algebras and their Applications in Mathematical Physics 15 - 20 July 2011, Weimar, Germany. Gurlebeck, K. (ed.). Weimar: ICCA9, p. 1-11 11 p. (International Conference on Clifford Algebras and their Applications in Mathematical Physics).*

Research output: Chapter in Book/Report/Conference proceeding › Conference contribution › Scientific › peer-review

### **Miten opiskella matematiikkaa yliopistossa - opas opiskelijoille**

Kailanto, M., 2011, *Oppaiden opas - vinkkejä opetukseen opintopolun eri vaiheissa. Aalto-yliopiston julkaisusarja Tiede + Teknologia. Myller, E. (ed.). Helsinki: Aalto-yliopisto, p. 53-55*

Research output: Chapter in Book/Report/Conference proceeding › Chapter › Professional

### **Mixture surrogate models based on Dempster-Shafer theory for global optimization problems**

Muller, J. & Piche, R., 2011, In : *Journal of Global Optimization.* 51, 1, p. 79-104 26 p.

Research output: Contribution to journal › Article › Scientific › peer-review

### **Mobile Tracking in Mixed Line-of-sight/Non-line-of-sight Conditions: Algorithms and Theoretical Lower Bound. Chapter 21**

Liang, C., Ali-Löytty, S., Piche, R. & Lenan, W., 2011, *Handbook of Position Location: Theory, Practice and Advances. Zekavat, R. & Buehrer, R. M. (eds.). Hoboken, NJ: WILEY-IEEE PRESS, p. 685-708*

Research output: Chapter in Book/Report/Conference proceeding › Chapter › Scientific

### **Modeling of Neuronal Growth In Vitro: Comparison of Simulation Tools NETMORPH and CX3D**

Acimovic, J., Mäki-Marttunen, T., Havela, R., Teppola, H. & Linne, M.-L., 2011, In : *Eurasip Journal on Bioinformatics and Systems Biology.* 2011, p. 1-13 13 p., 616382.

Research output: Contribution to journal › Article › Scientific › peer-review

### **Modifications of the 85/85 test and the temperature cycling test for tantalum capacitors**

Virkki, J., Sydänheimo, L. & Raunonen, P., 2011, In : *Soldering and Surface Mount Technology.* 23, 3, p. 168-176

Research output: Contribution to journal › Article › Scientific › peer-review

### **Motivating the Mathematics Studies by Real-life Examples of Signal Processing and Communications Engineering**

Huttunen, H., Valkama, M., Talvitie, J. & Laaksonen, M., 2011, *2011 IEEE Digital Signal Processing Workshop and IEEE Signal Processing Education Workshop (DSP/SPE), Sedona, USA, 4-7 January 2011. Piscataway, NJ: IEEE, p. 1-6 6 p. (IEEE Digital Signal Processing Workshop and IEEE Signal Processing Education Workshop DSP/SPE).*

Research output: Chapter in Book/Report/Conference proceeding › Conference contribution › Scientific › peer-review

### **Multimodal inverse problems: maximum compatibility estimate and shape reconstruction**

Kaasalainen, M., 2011, In : *Inverse Problems and Imaging.* 5, 1, p. 37-57

Research output: Contribution to journal › Article › Scientific › peer-review

### **Non-classical Logics with Real Life Applications**

Turunen, E., 2011, *Proceedings of International Conference of Rough Sets, Fuzzy Sets and Soft Computing ICRSFSSC-2009, November 5-7 2009, Tripura University. New Delhi: Serial Publications, p. 171-178 (International Conference of Rough Sets, Fuzzy Sets and Soft Computing ICRSFSSC).*

Research output: Chapter in Book/Report/Conference proceeding › Conference contribution › Scientific › peer-review

### **On Fractional Ornstein-Uhlenbeck Process**

Kaarakka, T. & Salminen, P., 2011, In : *Communications on Stochastic Analysis.* 5, 1, p. 121-133

Research output: Contribution to journal › Article › Scientific › peer-review

#### **On the distribution of coefficients of powers of positive polynomials**

Major, L., 2011, In : *Australasian Journal of Combinatorics*. 49, p. 239-243

Research output: Contribution to journal › Article › Scientific › peer-review

#### **Perturbation of strongly and polynomially stable Riesz-spectral operators**

Paunonen, L., 2011, In : *Systems and Control Letters*. 60, 4, p. 234-248

Research output: Contribution to journal › Article › Scientific › peer-review

#### **Plotting root-locus of infinite-dimensional systems**

Laakkonen, P., 2011, *Proceedings of CAO2011 ECCOMAS Thematic Conference on Computational Analysis and Optimization, Jyväskylä, Finland, 9.6.-11.6.2011. Reports of the Department of Mathematical Information Technology. Series A Collections*. Repin, S., Tiihonen, T. & Tuovinen, T. (eds.). Jyväskylä: University of Jyväskylä, p. 139-142 (CAO ECCOMAS Thematic Conference on Computational Analysis and Optimization; no. 1/2011).

Research output: Chapter in Book/Report/Conference proceeding › Conference contribution › Scientific › peer-review

#### **Properties of duration drift**

Kanniainen, J. & Ruohonen, K., 2011, In : *International Journal of Economics and Business Research*. 3, 2, p. 176-191

Research output: Contribution to journal › Article › Scientific › peer-review

#### **Puuvirta-virtuaalinen ja simuloitu oppimisympäristö**

Kortemaa, A., Moisio, M., Punkki, J., Palonen, T., Ranta, P., Leino, T., Alarotu, V., Koskinen, K. T. & Tohu, J., 2011

Research output: Artistic and non-textual form › Software › Scientific

#### **Rank Based Fingerprinting Algorithm for Indoor Positioning**

Machaj, J., Brida, P. & Piche, R., 2011, *2011 International Conference on Indoor Positioning and Indoor Navigation IPIN, 21-23 September 2011, Guimarães, Portugal*. Piscataway, NJ: IEEE, p. 1-6 6 p. (International Conference on Indoor Positioning and Indoor Navigation IPIN).

Research output: Chapter in Book/Report/Conference proceeding › Conference contribution › Scientific › peer-review

#### **Robust estimation of a reception region from location fingerprints**

Piche, R., 2011, *2011 International Conference on Localization and GNSS ICL-GNSS June 29-30, 2011 Tampere, Finland*. Piscataway, NJ: IEEE, p. 31-35 (International Conference on Localization and GNSS ICL-GNSS).

Research output: Chapter in Book/Report/Conference proceeding › Conference contribution › Scientific › peer-review

#### **Robust output regulation and the internal model principle**

Paunonen, L., 2011, *Digest of TISE Seminar 2011. TISE publications*. Niemistö, A. (ed.). Tampere: Tampere Graduate School in Information Science and Engineering (TISE). Tampere University of Technology, p. 71-75 (TISE Seminar; vol. 10).

Research output: Chapter in Book/Report/Conference proceeding › Conference contribution › Scientific

#### **Social Media, Reputation And Branding Of Innovation Hubs: A Periscope Using Content Analysis Of Twitter**

Yu, J. C., Russell, M. G., Still, K., Rubens, N., Huhtamäki, J. & Pöschko, J., 2011, *Proceedings of the Triple Helix IX International Conference: Silicon Valley: Global Model or Unique Anomaly? 11-14 July, 2011, Stanford, California, USA*. Stanford, CA: Stanford University, H-STAR Institute Center for Innovation and Communication, p. 1-20 20 p. (Triple Helix International Conference).

Research output: Chapter in Book/Report/Conference proceeding › Conference contribution › Scientific › peer-review

#### **Social media-supported indicators for user-driven service innovation**

Still, K., Isomursu, M., Koskela-Huotari, K. & Huhtamäki, J., 2011, *Proceedings of VTT Symposium on Service Innovation, August 18, 2011, Espoo, Finland. VTT Symposium*. Espoo: VTT Technical Research Centre of Finland, p. 208-217 (VTT Symposium on Service Innovation; vol. 271).

Research output: Chapter in Book/Report/Conference proceeding › Conference contribution › Scientific › peer-review

### **Some remarks on structural matrix rings and matrices with ideal entries**

Foldes, S. & Meletiou, G., 2011, In : Miskolc Mathematical Notes. 12, 1, p. 25-29  
Research output: Contribution to journal › Article › Scientific › peer-review

### **Studying the quality of noise in a large biochemical reaction network as a function of the system volume**

Intosalmi, J., Manninen, T., Ruohonen, K. & Linne, M-L., 2011, *The International Conference on Applied Mathematics, Modeling and Computational Science, AMMCS 2011, 25 - 29 July, Waterloo, Ontario, Canada*. Waterloo, Ontario, Canada: AMMCS 2011, p. 409 (International Conference on Applied Mathematics, Modeling and Computational Science AMMCS).

Research output: Chapter in Book/Report/Conference proceeding › Conference contribution › Scientific

### **Teleconsultation: Changes in technology and costs over a 12-year period**

Lamminen, J., Forsvik, H. J., Voipio, V. & Ruohonen, K., 2011, In : Journal of Telemedicine and Telecare. 17, 8, p. 412-416

Research output: Contribution to journal › Article › Scientific › peer-review

### **The root-locus analysis: An outline**

Laakkonen, P., 2011, *TISE Seminar 2011, Tampere, 25.5.2011. Digest of TISE Seminar 2011*. Niemistö, A. (ed.). Tampere: Tampere Graduate School in Information Science and Engineering (TISE). Tampere University of Technology, p. 1-4 4 p. (TISE Seminar; vol. 10).

Research output: Chapter in Book/Report/Conference proceeding › Conference contribution › Scientific

### **Transforming Innovation Ecosystems through Shared Vision and Network Orchestration**

Russell, M. G., Still, K., Huhtamäki, J., Yu, J. C. & Rubens, N., 2011, *Proceedings of the Triple Helix IX International Conference: Silicon Valley: Global Model or Unique Anomaly? 11-14 July, 2011, Stanford, California, USA*. Stanford, CA: Stanford University, H-STAR Institute Center for Innovation and Communication, p. 1-21 21 p. (Triple Helix International Conference).

Research output: Chapter in Book/Report/Conference proceeding › Conference contribution › Scientific › peer-review

### **Utilization of the hydraulic engineering design information for semi-automatic simulation model generation**

Markkula, M., Rokala, M., Palonen, T., Alarotu, V., Helminen, M., Koskinen, K. T., Salonen, J., Nykänen, O., Ranta, P. & Pohjolainen, S., 2011, *The Twelfth Scandinavian International Conference on Fluid Power, SICFP'11, May 18-20, 2011, Tampere, Finland*. Sairala, H. & Koskinen, K. T. (eds.). Tampere: Scandinavian International Conference on Fluid Power, p. 443-458 (Scandinavian International Conference on Fluid Power SICFP; vol. 12, no. 3).

Research output: Chapter in Book/Report/Conference proceeding › Conference contribution › Scientific › peer-review

### **Virtual machine laboratory based on m1-technology**

Helminen, M., Palonen, T., Rokala, M., Ranta, P., Mäkelä, T. & Koskinen, K. T., 2011, *The Twelfth Scandinavian International Conference on Fluid Power, SICFP'11, May 18-20, 2011, Tampere, Finland*. Tampere: Scandinavian International Conference on Fluid Power, p. 321-334 (Scandinavian International Conference on Fluid Power SICFP; vol. 12).

Research output: Chapter in Book/Report/Conference proceeding › Conference contribution › Scientific › peer-review

### **VRTUOSI: Courses Data Mining and Many-valued Similarities: Universidad Rey Juan Carlos**

Turunen, E., 2011

Research output: Artistic and non-textual form › Digital or Visual Products › Scientific

### **What can be done to bridge the competency gap between upper-secondary school and university mathematics?**

Silius, K., Pohjolainen, S., Kangas, J., Miilumäki, T. & Joutsenlahti, J., 2011, *2011 IEEE Global Engineering Education Conference EDUCON, 4-6 April 2011, Amman, Jordania*. Piscataway, NJ: IEEE, p. 428-436 (IEEE Global Engineering Education Conference EDUCON).

Research output: Chapter in Book/Report/Conference proceeding › Conference contribution › Scientific › peer-review

### **New perspectives in hyperbolic function theory**

Orelma, H., 28 Apr 2010, Tampere: Tampere University of Technology. 37 p. (Tampere University of Technology. Publication; vol. 892)

Research output: Book/Report › Doctoral thesis › Collection of Articles

### **A hyperbolic interpretation of Cauchy type kernels in hyperbolic function theory**

Eriksson, S-L. & Orelma, H., 2010, Tampere: Unknown Publisher. (Tampereen teknillinen yliopisto. Matematiikan laitos. Tutkimusraportti; vol. 96)

Research output: Book/Report › Commissioned report › Professional

### **Akustinen mallinnus**

Pohjolainen, S. & Suutala, A., 2010, *Matemaattinen mallinnus*. Pohjolainen, S. (ed.). Helsinki: WSOYpro, p. 238-259

Research output: Chapter in Book/Report/Conference proceeding › Chapter › Scientific

### **A motion model for articulated vehicles and a distributed acceleration measurement system**

Sirola, N. & Rouhe, J., 2010, *Proceedings of the 7th Workshop on Positioning, Navigation and Communication 2010 WPNC'10, 11-12 March 2010, Dresden, Germany*. p. 164-167

Research output: Chapter in Book/Report/Conference proceeding › Conference contribution › Scientific › peer-review

### **Approximative solutions to the bicriterion Vehicle Routing Problem with Time Windows**

Muller, J., 2010, In : *European Journal of Operational Research*. 202, 1, p. 223-231

Research output: Contribution to journal › Article › Scientific › peer-review

### **Bayesian assaying of GUHA nuggets**

Piche, R. & Turunen, E., 2010, *Information Processing and Management of Uncertainty in Knowledge-Based Systems. Theory and Methods, 13th International Conference, IPMU 2010, Dortmund, Germany, June 28 - July 2, 2010*.

*Communications in Computer and Information Science*. Hüllermeier, E., Kruse, R. & Hoffmann, F. (eds.). p. 348-355

Research output: Chapter in Book/Report/Conference proceeding › Conference contribution › Scientific › peer-review

### **Bayesian Methods**

Penttinen, A. & Piche, R., 2010, Tampere: Tampere University of Technology. 82 p.

Research output: Book/Report › Book › Professional

### **Box Gaussian mixture filter**

Ali-Löytty, S., 2010, In : *IEEE Transactions on Automatic Control*. 55, 9, p. 2165-2169

Research output: Contribution to journal › Article › Scientific › peer-review

### **Briefly about the root-locus of linear systems**

Laakkonen, P., 2010, *Digest of TISE Seminar 2010, Ylöjärvi, Finland, 26.5.2010. TISE Publications*. Koivisto, P. (ed.). p. 101-106 6 p.

Research output: Chapter in Book/Report/Conference proceeding › Conference contribution › Scientific

### **Closed classes of functions, generalized constraints, and clusters**

Lehtonen, E., 2010, In : *Algebra Universalis*. 63, 2-3, p. 203-234

Research output: Contribution to journal › Article › Scientific › peer-review

### **Closed-form algorithms in mobile positioning: Myths and misconceptions**

Sirola, N., 2010, *Proceedings of the 7th Workshop on Positioning, Navigation and Communication 2010 WPNC'10, 11-12 March 2010, Dresden, Germany*. p. 38-44

Research output: Chapter in Book/Report/Conference proceeding › Conference contribution › Scientific › peer-review

### **Column-partitioned matrices over rings without invertible transversal submatrices**

Foldes, S. & Lehtonen, E., 2010, In : *Ars Combinatoria*. 97, p. 33-39

Research output: Contribution to journal › Article › Scientific › peer-review