

Stress-strain hysteresis shape estimation of different soils using deformation-history integral (DHI) model

Vatanshenas, A., Mori, T., Farhadi, M. S. & Lämsivaara, T., 10 Jul 2020, In : MATERIALS PHYSICS AND MECHANICS. 44, 2, p. 221-228 8 p.

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

Evaluation of the Preconsolidation Stress and Deformation Characteristics of Finnish Clays based on Piezocone Testing

Di Buo, B., 13 Mar 2020, Tampere University. 186 p. (Tampere University Dissertations; vol. 222)

Research output: Book/Report › Doctoral thesis › Monograph

3D numerical modelling of thermal shock assisted percussive drilling

Saksala, T., 2020, In : Computers and Geotechnics. 128, 13 p., 103849.

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

Demolition of concrete by thermal shock spallation: a mesoscopic numerical study based on embedded discontinuity finite elements

Saksala, T., 2020, In : INTERNATIONAL JOURNAL OF FRACTURE.

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

Lime treatment of a soft sensitive clay: A sustainable reuse option

Di Sante, M., Di Buò, B., Fratolocchi, E. & Lämsivaara, T., 2020, In : Geosciences. 10, 5, 17 p., 182.

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

Methodology to estimate ionospheric scintillation risk maps and their contribution to position dilution of precision on the ground

Koulouri, A., Smith, N. D., Vani, B. C., Rimpiläinen, V., Astin, I. & Forte, B., 2020, In : JOURNAL OF GEODESY. 94, 20 p., 22.

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

Moisture behavior of external insulated precast concrete wall panels

Sekki, P., Karvinen, T. & Vinha, J., 2020, In : Journal of Building Physics. 26 p.

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

Numerical modeling of the tool-rock penetration process using FEM coupled with SPH technique

Mardalizad, A., Saksala, T., Manes, A. & Giglio, M., 2020, In : JOURNAL OF PETROLEUM SCIENCE AND ENGINEERING. 189, 14 p., 107008.

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

Numerical modelling of pore-fluid-enhanced thermal spallation in granitic rock

Saksala, T., 2020, In : Rakenteiden mekaniikka. 53, 2, p. 100-109 10 p.

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

Numerical modelling of thermal drilling of rock by heating-cooling cycle

Pressacco, M. & Saksala, T., 2020, *Rock Mechanics for Natural Resources and Infrastructure Development - Full Papers: Proceedings of the 14th International Congress on Rock Mechanics and Rock Engineering (ISRM 2019), September 13-18, 2019, Foz do Iguassu, Brazil*. CRC Press, p. 2547-2553 7 p. (Proceedings in Earth and geosciences; vol. 6).

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

Thermal shock assisted percussive drilling: A numerical study on the single-bit axisymmetric case

Saksala, T., 2020, In : International Journal of Rock Mechanics and Mining Sciences. 132, 18 p., 104365.

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

Thermal shock weakening of granite rock under dynamic loading: 3D numerical modeling based on embedded discontinuity finite elements

Saksala, T. & Ibrahimbegovic, A., 2020, In : International Journal for Numerical and Analytical Methods in Geomechanics. 44, 13, p. 1788-1811 24 p.

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

Variation of CPTu-based transformation models for undrained shear strength of Finnish clays

Knuuti, M. & Lämsävaara, T., 2 Oct 2019, In : *Georisk*. 13, 4, p. 262-270 9 p.

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

Temporal variation in indoor transfer of dirt-associated environmental bacteria in agricultural and urban areas

Hui, N., Parajuli, A., Puhakka, R., Grönroos, M., Roslund, M. I., Vari, H. K., Selonen, V. A. O., Yan, G., Siter, N., Nurminen, N., Oikarinen, S., Laitinen, O., Rajaniemi, J., Hyöty, H. & Sinkkonen, A., 7 Aug 2019, In : *Environment International*. 132, November 2019, 9 p., 105069.

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

Investigation and geotechnical characterization of Perniö clay, Finland

Di Buò, B., D'Ignazio, M., Selänpää, J., Haikola, M., Lämsävaara, T. & Di Sante, M., 5 Aug 2019, In : *AIMS Geosciences*. 5, 3, p. 591-616

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

Vesihuollon instituutit vaativat taitavaa jalkapallopeleä

Translated title of the contribution: : Water services institutions require skilful soccer playing

Inha, L., Katko, T. S. & Rajala, R., Jun 2019, In : *Rakennustekniikka*. 75, 3, p. 38-40 3 p.

Research output: Contribution to journal › Article › Professional

Estimation of preconsolidation stress of clays from piezocone by means of high-quality calibration data

D'Ignazio, M., Lunne, T., Andersen, K. H., Yang, S., Di Buò, B. & Lämsävaara, T., 8 May 2019, In : *AIMS Geosciences*. 5, 2, p. 104-116 13 p.

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

Vesihuolto yhdyskuntien ympäristön turvaajana: uskomuksia ja todellisuuksia

Translated title of the contribution: : Water services safequaring our environment: beliefs and realities

Katko, T. S., Inha, L. & Rajala, R., May 2019, In : *Ympäristökasvatus*. 2

Research output: Contribution to journal › Article › Professional

Numerical modeling of rock failure under dynamic loading with polygonal elements

Saksala, T. & Jabareen, M., 2019, In : *International Journal for Numerical and Analytical Methods in Geomechanics*. 43, 12, p. 2056-2074

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

Numerical modelling of underground tunnel in rock under seismic loading with polygonal finite elements

Saksala, T., 2019, *Earthquake Geotechnical Engineering for Protection and Development of Environment and Constructions: Proceedings of the 7th International Conference on Earthquake Geotechnical Engineering, (ICEGE 2019), June 17-20, 2019, Rome, Italy*. CRC Press, p. 4808-4814 7 p. (Proceedings in Earth and geosciences ; vol. 4).

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

On the Strain Rate Sensitivity of Coarse-Grained Rock: A Mesoscopic Numerical Study

Saksala, T., 2019, In : *Rock Mechanics and Rock Engineering*. 52, 9, p. 3229-3240

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

Tierakenteen rasittuminen yli 76 tonnin HCT-yhdistelmien koekuormituksissa vuosina 2015 - 2017: Liikenneviraston tutkimuksia ja selvityksiä 63/2018

Translated title of the contribution: : Road Structure Strain on Test Loads of More than 76 Tons HCT Combinations in 2015 - 2017: Research Reports of the Finnish Transport Agency 63/2018

Vuorimies, N., Kalliainen, A., Rossi, J., Kolisoja, P., Varin, P. & Saarenketo, T., Dec 2018, *Liikennevirasto*. 115 p.

Research output: Book/Report › Book › Scientific

Numerical modelling of thermal spallation of rock

Saksala, T., Nov 2018, *Proceedings of XII Argentine Congress on Computational Mechanics (MECOM2018)*. p. 1567-1574 8 p. (*Mecánica Computacional*; vol. 36, no. 48).

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

Nysse tulee - Tampere3 nimittäin

Translated title of the contribution: : Now it comes - namely Tampere3 university

Kolisoja, P., Oct 2018, In : *Geofoor*. 48, p. 27-28 2 p.

Research output: Contribution to journal › Article › Professional

A High-resolution Coupled Permafrost - Ice Sheet Model

Zwinger, T., Hartikainen, J. & Cohen, D., 19 Jun 2018, p. 123. 1 p.

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

Thermal Evolution of a Holocene Arctic Environment in Western Greenland

Hartikainen, J., Claesson Liljedahl, L., Kolisoja, P., Kontula, A., Kouhia, R., Näslund, J-O., van As, D. & Zwinger, T., 19 Jun 2018, p. 122. 1 p.

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

Vertical profiles of lung deposited surface area (LDSA) concentration measured with a drone in an urban street canyon (MP-17)

Kuuluvainen, H., Poikkimäki, M., Järvinen, A., Kuula, J., Irjala, M., Dal Maso, M., Keskinen, J., Timonen, H., Niemi, J. V. & Rönkkö, T., 18 Jun 2018, p. 73.

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

Identifying criteria for environmental risk assessment models at different stage-gates of nano-material/product innovation considering requirements of various stakeholders (TH083)

Sørensen, S. N., Hansen, S. F., Baun, A., Spurgeon, D., Matzke, M., Schirmer, K., Burkard, M., Dal Maso, M., Poikkimäki, M., Verschoor, A., Quik, J., Peijnenburg, W., Wigger, H. & Nowack, B., 17 May 2018.

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

Numerical modelling of fracture processes in thermal shock weakened rock

Pressacco, M. & Saksala, T., May 2018, *Geomechanics and Geodynamics of Rock Masses, Volume 1 Proceedings of the 2018 European Rock Mechanics Symposium*. Litvinenko, V. (ed.). CRC Press, p. 883-888

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

Numerical modelling of rock fracture with a Hoek-Brown viscoplastic-damage model implemented with polygonal finite elements

Saksala, T., May 2018, *Geomechanics and Geodynamics of Rock Masses, Volume 1: Proceedings of the 2018 European Rock Mechanics Symposium*. Litvinenko, V. (ed.). CRC Press, p. 903-908

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

Vertical profiles of lung deposited surface area concentration of particulate matter measured with a drone in an urban street canyon

Kuuluvainen, H., Poikkimäki, M., Järvinen, A., Irjala, M., Dal Maso, M., Niemi, J. V., Timonen, H., Keskinen, J. & Rönkkö, T., 13 Mar 2018.

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

3D finite elements modelling of percussive rock drilling: Estimation of rate of penetration based on multiple impact simulations with a commercial drill bit

Saksala, T., Fourmeau, M., Kane, P-A. & Hokka, M., 2018, In : *Computers and Geotechnics*. 99, p. 55-63 9 p.

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

Effects of Lime Stabilization on Hydraulic Behavior of Finnish Soft Sensitive Clays: Towards a Sustainable Geoenvironment

Di Sante, M., Giorgetti, F., Di Buo, B., Länsivaara, T. & Pasqualini, E., 2018, *Proceedings of the 8th International Congress on Environmental Geotechnics*. Springer, Vol. 1. p. 226-234 9 p.

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

Evaluation of existing CPTu-based correlations for the undrained shear strength of soft Finnish clays

Selänpää, J., Di Buo, B., Haikola, M., Länsivaara, T. & D'Ignazio, M., 2018, *Cone Penetration Testing 2018: Proceedings of the 4th International Symposium on Cone Penetration Testing (CPT'18)*. CRC Press, p. 571-577 7 p.

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

Evaluation of sample quality from different sampling methods in Finnish soft sensitive clays

Di Buo, B., Selänpää, J., Länsivaara, T. & D'Ignazio, M., 2018, In : *Canadian Geotechnical Journal*. 40 p.

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

Foreword

Länsivaara, T., 2018, In : *HKIE Transactions*. 25, 2, 1 p.

Research output: Contribution to journal › Review Article › Scientific

Mechanical properties of recovered municipal solid waste incineration bottom ash: the influence of aging and changes in moisture content

Sormunen, L. A. & Kolisoja, P., 2018, In : *Road Materials and Pavement Design*. 19, 2, p. 252-270

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

Otat näytteen vain kerran

Länsivaara, T. & Korkiala-Tanttu, L., 2018, *Geotekniikan Päivä*. SGY

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

WC-tilat ja -opasteet vain likana silmissämme?

Translated title of the contribution : WC and signs only as dirt in our eyes?

Katko, T. S., 2018, In : *Kuntatekniikka*. 72, 4, p. 45 1 p.

Research output: Contribution to journal › Article › Professional

Artificial neural networks models for rate of penetration prediction in rock drilling

Fathipour Azar, H., Saksala, T. & Jalali, S-M. E., 21 Aug 2017, In : *Rakenteiden mekaniikka*. 50, 3, p. 252-255 4 p.

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

Numerical modelling of rock materials with polygonal finite elements

Saksala, T., 21 Aug 2017, In : *Rakenteiden mekaniikka*. 50, 3, p. 216-219 4 p.

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

Numerical modelling of dynamic spalling test on rock with an emphasis on the influence of pre-existing cracks

Saksala, T., 7 Aug 2017, In : *Rakenteiden mekaniikka*. 50, 2, p. 63-76

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

Chasing measurements for real-world emissions of city buses

Järvinen, A., Karjalainen, P., Bloss, M., Potila, O., Simonen, P., Kuuluvainen, H., Timonen, H., Saarikoski, S., Niemi, J. V., Keskinen, J. & Rönkkö, T., 2017.

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

Continuum modelling of dynamic rock fracture under triaxial confinement

Saksala, T., Hokka, M. & Kuokkala, V-T., 2017, *14th International Conference on Fracture, Proceedings of ICF 14 : Rhodes, Greece, June 18-23, 2017*. 2 p. 822

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

Determination of remoulding energy of sensitive clays

Thakur, V., Degago, S. A., Selänpää, J. & Länsivaara, T., 2017, *Landslides in Sensitive Clays: From Research to Implementation*. Springer, p. 97-107 11 p. (Advances in Natural and Technological Hazards Research; vol. 46).

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

Effects of sample disturbance in the determination of soil parameters for advanced finite element modelling of sensitive clays

D'Ignazio, M., Jostad, H. P., Länsivaara, T., Lehtonen, V., Mansikkamäki, J. & Meehan, C., 2017, *Landslides in Sensitive Clays: From Research to Implementation*. Springer, p. 146-154 9 p. (Advances in Natural and Technological Hazards Research; vol. 46).

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

Failure in anisotropic sensitive clays: a finite element study of the Perniö failure test

D'Ignazio, M., Länsivaara, T. & Jostad, H. P., 2017, In : *Canadian Geotechnical Journal*. 54, 7, p. 1013-1033

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

Numerical 3D modelling of the effects of strain rate and confining pressure on the compressive behavior of Kuru granite

Saksala, T., Hokka, M. & Kuukkala, V-T., 2017, In : *Computers and Geotechnics*. 88, p. 1-8 8 p.

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

Problems related to field vane testing in soft soil conditions and improved reliability of measurements using an innovative field vane device

Selänpää, J., Buò, B. D., Länsivaara, T. & D'Ignazio, M., 2017, *Landslides in Sensitive Clays: From Research to Implementation*. Springer, p. 121-131 11 p. (Advances in Natural and Technological Hazards Research; vol. 46).

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

Reply to the discussion by Mesri and Wang on "Correlations for undrained shear strength of Finnish soft clays"

D'Ignazio, M., Phoon, K-K., Tan, S. A., Länsivaara, T. & Lacasse, S., 2017, In : *Canadian Geotechnical Journal*. 5 p.

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

Valkea kaupunki, mustat vedet

Juuti, P. & Rajala, R., 2017, In : *Vesitalous*. 2017, 1, p. 15-17 3 p.

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

Älypölkky, radan monitorointi, kreosoottipölkyn korvaavat vaihtoehdot

Luomala, H., 29 Nov 2016

Research output: Other contribution › Scientific

Ballast bed

Luomala, H., 24 Nov 2016

Research output: Other contribution › Scientific

Näkökulma-kolumni: Putkiremontit kestävät aivan liian kauan

Saari, A., 24 Nov 2016, Sanoma Talotekniikkajulkaisut Oy.

Research output: Other contribution › Scientific

Sleepers

Luomala, H., 24 Nov 2016

Research output: Other contribution › Scientific

Tutkimusohjelma Elinkaaritehokas RAta (TERA): Kokonaisvaltainen ote ratarakennetutkimukseen

Luomala, H., 15 Nov 2016

Research output: Other contribution › Scientific

Editorial to "The best papers from the 32nd International Symposium on Automation and Robotics in Construction and Mining (ISARC 2015)"

Malaska, M. & Heikkilä, R., 1 Nov 2016, In : *Automation in Construction*. 71, p. 1 1 p.

Research output: Contribution to journal › Editorial › Scientific

Comparison of community managed projects and conventional approaches in rural water supply of Ethiopia
Behailu, B. M., Suominen, A., Katko, T. S., Mattila, H. & Yayehyirad, G., 30 Sep 2016, In : African Journal of Environmental Science and Technology. 10, 9, p. 292-306 15 p., 04AF23059936.
Research output: Contribution to journal › Article › Scientific › peer-review

Undrained shear strength of Finnish clays for stability analyses of embankments
D'Ignazio, M., 21 Sep 2016, Tampere University of Technology. 178 p. (Tampere University of Technology. Publication; vol. 1412)
Research output: Book/Report › Doctoral thesis › Monograph

Combining mineral fractions of recovered MSWI bottom ash: improvement for utilization in civil engineering structures
Sormunen, L. A., Kalliainen, A., Kolisoja, P. & Rantsi, R., 22 Aug 2016, In : Waste and Biomass Valorization. 12 p.
Research output: Contribution to journal › Article › Scientific › peer-review

A laboratory listening experiment on subjective and objective rating of impact sound insulation of concrete floors
Kylliäinen, M., Hongisto, V., Oliva, D. & Rekola, L., Aug 2016, *Proceedings of the INTER-NOISE 2016, 45th International Congress on Noise Control Engineering : Towards a Quieter Future, August 21-24, 2016, Hamburg, Germany*. Hamburg: German Acoustical Society (DEGA), p. 894-902 9 p. 193
Research output: Chapter in Book/Report/Conference proceeding › Conference contribution › Scientific

A method for design of sound insulation of glazed balconies against traffic noise
Kovalainen, V., Kylliäinen, M. & Huhtala, T., Aug 2016, *Proceedings of the INTER-NOISE 2016, 45th International Congress and Exposition on Noise Control Engineering : Towards a Quieter Future, August 21-24, 2016, Hamburg, Germany*. Hamburg: German Acoustical Society (DEGA), p. 3834-3841 8 p. 503
Research output: Chapter in Book/Report/Conference proceeding › Conference contribution › Scientific

Problems with Railway Track Drainage in Finland
Latvala, J., Nurmikolu, A. & Luomala, H., 13 Jul 2016, In : Procedia Engineering. 143, p. 1051-1058 7 p.
Research output: Contribution to journal › Article › Scientific › peer-review

The effect of climate change on freeze-thaw durability of concrete structures in Finland
Pakkala, T., Lemberg, A-M. & Lahdensivu, J., Jun 2016, p. 53. 1 p.
Research output: Other conference contribution › Paper, poster or abstract › Scientific

Deterioration mechanisms and life cycle of concrete monoblock railway sleepers in Finnish conditions
Kerokoski, O., Rantala, T. & Nurmikolu, A., 31 May 2016, *WCRR 2016 Proceedings: 11th World congress on railway research, 29.5-2.6.2016, Milano*.
Research output: Chapter in Book/Report/Conference proceeding › Conference contribution › Professional

Betonirakenteiden korjausohjeet 2016, by 41
Köliö, A., Pakkala, T., Lahdensivu, J. & Pentti, M., May 2016, Suomen Betoniyhdistys r.y. 115 p.
Research output: Book/Report › Book › Professional

Preliminary results from a study aiming to improve ground investigation data
Di Buo, B., D'Ignazio, M., Selänpää, J. & Länsivaara, T., May 2016, *Proceedings of the 17th Nordic Geotechnical Meeting: Challenges in Nordic Geotechnic 25th-28th of May*. Reykjavik: Icelandic Geotechnical Society, p. 187-197 11 p.
Research output: Chapter in Book/Report/Conference proceeding › Conference contribution › Scientific › peer-review

Strength increase below an old test embankment in Finland
D'Ignazio, M. & Länsivaara, T., May 2016, *The 17th Nordic Geotechnical Meeting: Conference proceedings*. Reykjavik: Icelandic Geotechnical Society, p. 357-366
Research output: Chapter in Book/Report/Conference proceeding › Conference contribution › Scientific › peer-review

3D Finite Element Model as a Tool for Analyzing the Structural Behavior of a Railway Track
Kalliainen, A., Kolisoja, P. & Nurmikolu, A., 2016, In : Procedia Engineering. 143, p. 820-827 8 p.
Research output: Contribution to journal › Article › Scientific › peer-review

Acceptability of contaminated soils and waste materials in landfill structures

Leppänen, M. M. & Kuula, P., 2016.

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

Back-calculation of the Saint-Alban A test embankment with a new modelling approach in LEM

Lehtonen, V. & Lämsivaara, T., 2016, *Proceedings of the The 17th Nordic Geotechnical Meeting, Reykjavik Iceland: 25th - 28th of May 2016*. p. 691-699 9 p.

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

Characterization of fine fraction mined from two Finnish landfills

Mönkäre, T. J., Palmroth, M. R. T. & Rintala, J. A., 2016, In : *Waste Management*. 47A, p. 34-39 6 p.

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

Commercialising reclaimed materials in earthworks – guidelines for productization and the process of appending these materials in the Finnish national code of practice

Koivisto, K., Forsman, J., Ronkainen, M., Lahtinen, P., Kolisoja, P. & Kuula, P., 2016, *Proceedings of the 17th Nordic Geotechnical Meeting Reykjavik Iceland: Challenges in Nordic Geotechnic 25th - 28th of May*. Reykjavik: Icelandic Geotechnical Society, 10 p.

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

Correlations for undrained shear strength of Finnish soft clays

D'Ignazio, M., Phoon, K. K., Tan, S. A. & Lämsivaara, T., 2016, In : *Canadian Geotechnical Journal*. 53, 10, p. 1628-1645

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

Modelling of plastic culvert and road embankment interaction in 3D

Kolisoja, P. & Kalliainen, A., 2016, In : *Procedia Engineering*. 143, p. 427-434 8 p.

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

Spatial variability of reed bed spectra in Olkiluoto Island

Tuominen, J. & Lipping, T., 2016, *2016 IEEE International Geoscience and Remote Sensing Symposium (IGARSS): July 10-15, Beijing, China*. IEEE, p. 7188-7191 4 p. (IEEE International Geoscience and Remote Sensing Symposium Proceedings).

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

Teräsrumpujen uudet korjausmenetelmät: Halkaistu sisäputki, puolipohjaus ja pohjan betonointi

Kalliainen, A., Haakana, V., Korhonen, M., Mäkinen, J. & Kolisoja, P., 2016, *Liikennevirasto*. 70 p. (Liikenneviraston tutkimuksia ja selvityksiä)

Research output: Book/Report › Book › Professional

The effects of improved energy efficiency on indoor environmental quality in multi-family buildings

Du, L., Prasauskas, T., Leivo, V., Turunen, M., Kiviste, M., Martuzevicius, D. & Haverinen-Shaughnessy, U., 2016, *Indoor Air 2016: The 14th international conference of Indoor Air Quality and Climate Ghent, Belgium July 3-8 2016*. 737

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

Vesihuollon strateginen kehittäminen haltuun: Ydin- ja tukitoiminnon tarpeen hahmottaa selkeästi

Translated title of the contribution: : Water services to be developed strategically: Recognizing the core and non-core activities of water services

Katko, T. S. & Hukka, J. J., 2016, In : *Kuntatekniikka*. 70, 2, p. 12-13 2 p.

Research output: Contribution to journal › Article › Professional

Tien ja radan sitomattomissa rakennekerroksissa käytettävien kiviainesten lujuuden ja hienontumisen tutkiminen : kirjallisuusselvitys

Translated title of the contribution: : Study of strength and degradation of aggregates used in unbound structural layers on roads and railways – a literature review

Kuula, P., 18 Nov 2015, 2015 ed. Helsinki: Liikennevirasto. 115 p. (Liikenneviraston tutkimuksia ja selvityksiä; vol. 2015, no. 68)

Arsenic in bedrock, soil and groundwater - The first arsenic guidelines for aggregate production established in Finland

Parviainen, A., Loukola-Ruskeeniemi, K., Tarvainen, T., Hatakka, T., Härmä, P., Backman, B., Ketola, T., Kuula, P., Lehtinen, H., Sorvari, J., Pyy, O., Ruskeeniemi, T. & Luoma, S., 1 Nov 2015, In : *Earth-Science Reviews*. 150, p. 709-723 15 p.

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

Kapillaaristen vedenimuominaisuuksien määrittämiseen sopivan vapaan vedenimukoelaitteiston kehittäminen

Tuominen, E. & Vinha, J., 20 Oct 2015, *Rakennusfysiikka 2015. Uusimmat tutkimustulokset ja hyvät käytännön ratkaisut. 20.-22.10.2015, Tampere*. Vinha, J. & Ruuska, T. (eds.). Tampere: Tampereen teknillinen yliopisto, rakennustekniikan laitos, rakennetekniikka, p. 233-238 6 p.

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

Laastien vedenimukertoimen määrittämisen virhelähdekokeet

Tuominen, E. & Vinha, J., 20 Oct 2015, *Rakennusfysiikka 2015. Uusimmat tutkimustulokset ja hyvät käytännön ratkaisut. 20.-22.10.2015, Tampere*. Vinha, J. & Ruuska, T. (eds.). Tampere: Tampereen teknillinen yliopisto, rakennustekniikan laitos, rakennetekniikka, p. 239-244 6 p.

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

Laastin ja betonin lämmönjohtavuuden ja ominaislämpökapasiteetin määrittäminen lämpövirtalevyllä

Ruuska, T. & Vinha, J., 20 Oct 2015, *Rakennusfysiikka 2015. Uusimmat tutkimustulokset ja hyvät käytännön ratkaisut. 20.-22.10.2015, Tampere*. Vinha, J. & Ruuska, T. (eds.). Tampere: Tampereen teknillinen yliopisto, rakennustekniikan laitos, rakennetekniikka, p. 227-232 6 p.

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

Betonisten ratapölkkyjen väsytestikuormituskokeet

Translated title of the contribution: : Fatigue loading tests of concrete railway sleepers

Rantala, T., Kerokoski, O. & Nurmikolu, A., 3 Jun 2015, In : *Rakenteiden mekaniikka*. 48, 1, p. 18-33 16 p.

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

Test in scala reale su argille sensibili: l'esperienza finlandese

Translated title of the contribution: : Full-scale failure test on sensitive clays: the Finnish experience

D'Ignazio, M., May 2015, *5 IAGIG, Incontro Annuale dei Giovani Ingegneri Geotecnici*. Rome

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

A proposal for some modifications of EN 1997-1 design approaches

Lämsivaara, T. & Knuuti, M., 2015, *Fifth International Symposium on Geotechnical Safety and Risk (ISGSR): Rotterdam, The Netherlands 13-16 October 2015*. IOS Press, p. 486-491 6 p.

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

Kiviaines- ja luonnonkiviteollisuuden kehitysnäkymät

Loukola-Ruskeeniemi, K. (ed.), Lonka, H. (ed.), Ehrukainen, E., Gustafsson, J., Honkanen, M., Härmä, P., Jauhiainen, P., Kuula, P., Nenonen, K., Pellinen, T., Rintala, J., Selonen, O., Martikainen, M. & Aalto, M., 2015, Helsinki: Työ- ja elinkeinoministeriö. 72 p. (Työ- ja elinkeinoministeriön julkaisuja; vol. 2015, no. 54)

Research output: Book/Report › Commissioned report › Professional

Konvektiivinen lämmönsiirtyminen ratapenkereessä

Translated title of the contribution: : Convective heat transfer in railway embankment

Latvala, J., 2015, *Liikennevirasto*. 115 p. (Liikenneviraston tutkimuksia ja selvityksiä)

Research output: Book/Report › Commissioned report › Professional

Selvitys UUMA-materiaalien teknisen kelpoisuuden arviointiin liittyvistä testausstandardeista ja -menetelmistä (1. vaihe), 29.12.2014

Translated title of the contribution: : Selvitys UUMA-materiaalien teknisen kelpoisuuden arviointiin liittyvistä testausstandardeista ja -menetelmistä (1. vaihe), 29.12.2014

Kuula, P., Kolisoja, P., Sjöberg, M., Ketola, T., Koivisto, K., Forsman, J., Dettenborn, T. & Jyväkä, H., 2015, Ramboll. (UUMA 2, Uusiomateriaalit maarakentamisessa ohjelma 2013-2015)

Research output: Book/Report › Commissioned report › Professional

Shear bands in soft clays: strain-softening behavior in finite element method

D'Ignazio, M. & Länsivaara, T., 2015, In : *Rakenteiden mekaniikka*. 48, 1, p. 83-98 16 p.

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

Varmuuden kohdentaminen geotekniikassa, miten Eurokoodeja voisi kehittää?

Länsivaara, T., 2015, *Geotekniikan päivä 2015*. SGY

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

Anisotropic total and effective stress stability analysis of the Perniö failure test

D'Ignazio, M., Mansikkamäki, J. & Länsivaara, T., 2014, *Numerical Methods in Geotechnical Engineering : Proceedings of the 8th European Conference on Numerical Methods in Geotechnical Engineering NUMGE2014, Delft, The Netherlands, 18-20 June 2014*. Hicks, M. A. , Brinkgreve, R. B. . J. . & Rohe, A. (eds.). CRC Press Taylor & Francis Group; A Balkema book, p. 609-614 6 p.

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

ASROCKS-Hankkeen heikkouuttomenetelmien vertailu

Translated title of the contribution: : ASROCKS-Hankkeen heikkouuttomenetelmien vertailu

Tarvainen, T., Hatakka, T., Backman, B., Ketola, T. & Härmä, P., 2014, *GEOLOGIAN TUTKIMUSKESKUS*. 13 p.

Research output: Book/Report › Commissioned report › Professional

Condition-Based Track Maintenance and Rehabilitation Design Using Combined Data Analysis

Silvast, M., Nurmikolu, A., Wiljanen, B. & Mäkelä, E., 2014, *GEORAIL 2014 : 2nd International symposium - Railway geotechnical engineering, 6-7 November 2014, France*. Ranska: IFSTTAR, p. 649-656 8 p.

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

Finnish mine waste disposal areas

Leppänen, M., Laasonen, J. & Välisalo, T., 2014, *Geosynthetics Mining Solutions 2014*. Infomine

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

Kiviainesten otto arseenialueilla - opas kiviainesten tuottajille, maarakentajille ja viranomaisille.

Translated title of the contribution: : Kiviainesten otto arseenialueilla - opas kiviainesten tuottajille, maarakentajille ja viranomaisille.

Härmä, P., Tarvainen, T., Backman, B., Hatakka, T., Ketola, T., Kuula, P., Luoma, S., Pyy, O., Sorvari, J. & Loukola-Ruskeeniemi, K., 2014, Espoo: GEOLOGIAN TUTKIMUSKESKUS. 71 p.

Research output: Book/Report › Commissioned report › Professional

Liite 6: Yleistä kaivannaisjätealueista ja patoturvallisuudesta

Leppänen, M., Välisalo, T. (ed.) & Laasonen, J., 2014, *Kaivosten stressitesti 2013*. Ympäristöministeriö, (Ympäristöministeriön raportteja).

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

Stiffmaster - A continuous track stiffness measurement device

Luomala, H., Peltokangas, O. & Nurmikolu, A., 2014, *GEORAIL 2014 : 2nd International symposium - Railway geotechnical engineering, 6-7 November 2014, France*. IFSTTAR, p. 109-118 10 p.

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