

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

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

3D numerical modelling of thermal shock assisted percussive drilling

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

Acceptability of contaminated soils and waste materials in landfill structures

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

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

Älypölkky, radan monitorointi, kreosoottipölkyn korvaavat vaihtoehdot

Luomala, H., 29 Nov 2016

Research output: Other 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

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

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

Länsivaara, 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

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

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

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

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Research output: Contribution to journal › Article › 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

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

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

Ballast bed

Luomala, H., 24 Nov 2016

Research output: Other contribution › Scientific

Betonirakenteiden korjausohjeet 2016, by 41

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Research output: Book/Report › Book › Professional

Betonisten ratapölkkyjen väsytytkuormituskokeet

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

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

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

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

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.

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Comparison of community managed projects and conventional approaches in rural water supply of Ethiopia

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

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

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

Continuum modelling of dynamic rock fracture under triaxial confinement

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

Correlations for undrained shear strength of Finnish soft clays

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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

Deterioration mechanisms and life cycle of concrete monoblock railway sleepers in Finnish conditions

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

Determination of remoulding energy of sensitive clays

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

Research output: Contribution to journal > Editorial > Scientific

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

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

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

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

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

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

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

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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

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Research output: Contribution to journal > Review 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

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

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

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

Finnish mine waste disposal areas

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

Foreword

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

Research output: Contribution to journal › Review Article › 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

Investigation and geotechnical characterization of Perniö clay, Finland

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

Kapillaaristen vedenimuominaisuuksien määrittämiseen sopivan vapaan vedenimukoelaitteiston kehittäminen

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

Kiviaines- ja luonnonkiviteollisuuden kehitysnäkymät

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Research output: Book/Report › Commissioned report › Professional

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

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

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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

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

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

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

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

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

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

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

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

Näkökulma-kolumni: Putkiremontit kestävät aivan liian kauan

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

Research output: Other contribution › Scientific

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

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

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

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 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 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

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

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

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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 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

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

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

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

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

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

Otat näytteen vain kerran

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

Preliminary results from a study aiming to improve ground investigation data

Di Buò, 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

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

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

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

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. & Jyväreä, 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

Sleepers

Luomala, H., 24 Nov 2016

Research output: Other contribution › Scientific

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

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

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

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

Vatanshenas, A., Mori, T., Farhadi, M. S. & Länsivaara, 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

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

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

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

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

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Thermal Evolution of a Holocene Arctic Environment in Western Greenland

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

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Research output: Book/Report › Commissioned report › Professional

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Vesihuollon instituutiot vaativat taitavaa jalkapallopeleä

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