

Behailu, Beshah M. et al. "Comparison of community managed projects and conventional approaches in rural water supply of Ethiopia". *African Journal of Environmental Science and Technology*. 2016, 10(9). 292-306. <https://doi.org/10.5897/AJEST2016.2132>

Di Buo, B. et al. "Preliminary results from a study aiming to improve ground investigation data". *Proceedings of the 17th Nordic Geotechnical Meeting: Challenges in Nordic Geotechnics 25th-28th of May*. Reykjavik: Icelandic Geotechnical Society. 2016, 187-197.

Di Buo, Bruno et al. "Evaluation of sample quality from different sampling methods in Finnish soft sensitive clays". *Canadian Geotechnical Journal*. 2018. <https://doi.org/10.1139/cgj-2018-0066>

Di Buo, Bruno *Evaluation of the Preconsolidation Stress and Deformation Characteristics of Finnish Clays based on Piezocone Testing* Tampere University Dissertations. Tampere University. 2020.

Di Buò, Bruno et al. "Investigation and geotechnical characterization of Perniö clay, Finland". *AIMS Geosciences*. 2019, 5(3). 591–616. <https://doi.org/10.3934/geosci.2019.3.591>

D'Ignazio, Marco et al. "Estimation of preconsolidation stress of clays from piezocone by means of high-quality calibration data". *AIMS Geosciences*. 2019, 5(2). 104-116. <https://doi.org/10.3934/geosci.2019.2.104>

D'Ignazio, Marco, Juho Mansikkamäki, and Tim Länsivaara "Anisotropic total and effective stress stability analysis of the Perniö failure test". Hicks, Michael A. Brinkgreve, Ronald B. J. Rohe, Alexander (editors). *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*. CRC Press Taylor & Francis Group; A Balkema book. 2014, 609-614. <https://doi.org/10.1201/b17017-109>

D'Ignazio, Marco and Tim Länsivaara. "Shear bands in soft clays: strain-softening behavior in finite element method". *Rakenteiden mekaniikka*. 2015, 48(1). 83-98.

D'Ignazio, Marco and Tim Länsivaara "Strength increase below an old test embankment in Finland". *The 17th Nordic Geotechnical Meeting: Conference proceedings*. Reykjavik: Icelandic Geotechnical Society. 2016, 357-366.

D'Ignazio, Marco et al. "Correlations for undrained shear strength of Finnish soft clays". *Canadian Geotechnical Journal*. 2016, 53(10). 1628-1645. <https://doi.org/10.1139/cgj-2016-0037>

D'Ignazio, Marco, Tim Länsivaara and Hans Petter Jostad. "Failure in anisotropic sensitive clays: a finite element study of the Perniö failure test". *Canadian Geotechnical Journal*. 2017, 54(7). 1013-1033. <https://doi.org/10.1139/cgj-2015-0313>

D'Ignazio, Marco "Test in scala reale su argille sensibili: l'esperienza finlandese". *5 IAGIG, Incontro Annuale dei Giovani Ingegneri Geotecnici*. Rome. 2015.

D'Ignazio, Marco *Undrained shear strength of Finnish clays for stability analyses of embankments* Tampere University of Technology. Publication. Tampere University of Technology. 2016.

D'Ignazio, Marco et al. "Reply to the discussion by Mesri and Wang on "Correlations for undrained shear strength of Finnish soft clays"". *Canadian Geotechnical Journal*. 2017. <https://doi.org/10.1139/cgj-2017-0114#.WiUscmeXcTU>

D'Ignazio, Marco et al. "Effects of sample disturbance in the determination of soil parameters for advanced finite element modelling of sensitive clays". *Landslides in Sensitive Clays: From Research to Implementation*. Advances in Natural and Technological Hazards Research. Springer. 2017, 146-154. https://doi.org/10.1007/978-3-319-56487-6_13

Di Sante, M. et al. "Effects of Lime Stabilization on Hydraulic Behavior of Finnish Soft Sensitive Clays: Towards a Sustainable Geoenvironment". *Proceedings of the 8th International Congress on Environmental Geotechnics*. Springer. 2018, 226-234. https://doi.org/10.1007/978-981-13-2221-1_19

Di Sante, Marta et al. "Lime treatment of a soft sensitive clay: A sustainable reuse option". *Geosciences*. 2020. 10(5). <https://doi.org/10.3390/geosciences10050182>

Du, Liuliu et al. "The effects of improved energy efficiency on indoor environmental quality in multi-family buildings". *Indoor Air 2016: The 14th international conference of Indoor Air Quality and Climate Ghent, Belgium July 3-8 2016*. 2016.

Fathipour Azar, Hadi, Timo Saksala and Seyed-Mohammad Esmail Jalali. "Artificial neural networks models for rate of penetration prediction in rock drilling". *Rakenteiden mekaniikka*. 2017, 50(3). 252-255. <https://doi.org/10.23998/rm.64969>

Härmä, Paavo et al. *Kiviainesten otto arseenialueilla - opas kiviainesten tuottajille, maarakentajille ja viranomaisille*. Espoo: GEOLOGIAN TUTKIMUSKESKUS. 2014.

Hartikainen, Juha et al. *Thermal Evolution of a Holocene Arctic Environment in Western Greenland*. 2018. 1 p.

Hui, Nan et al. "Temporal variation in indoor transfer of dirt-associated environmental bacteria in agricultural and urban areas". *Environment International*. 2019. 132(November 2019). <https://doi.org/10.1016/j.envint.2019.105069>

Inha, Laura, Tapio S. Katko, and Riikka Rajala. "Vesihuollon instituutiot vaativat taitavaa jalkapallopelejä". *Rakennustekniikka*. 2019, 75(3). 38-40.

Järvinen, Anssi et al. *Chasing measurements for real-world emissions of city buses*. 2017.

Juuti, Petri and Riikka Rajala. "Valkea kaupunki, mustat vedet". *Vesitalous*. 2017, 2017(1). 15-17.

Kalliainen, Antti et al. *Teräsrumpujen uudet korjausmenetelmät: Halkaistu sisäputki, puolipohjaus ja pohjan betonointi* Liikenneviraston tutkimuksia ja selvityksiä. Liikennevirasto. 2016.

Kalliainen, Antti, Pauli Kolisoja and Antti Nurmikolu. "3D Finite Element Model as a Tool for Analyzing the Structural Behavior of a Railway Track". *Procedia Engineering*. 2016, 143. 820-827. <https://doi.org/10.1016/j.proeng.2016.06.133>

Katko, Tapio S. and Jarmo J. Hukka. "Vesihuollon strateginen kehittäminen haltuun: Ydin- ja tukitoiminnon tarpeen hahmottaa selkeästi". *Kuntatekniikka*. 2016, 70(2). 12-13.

Katko, Tapio S. "WC-tilat ja -opasteet vain likana silmissämme?". *Kuntatekniikka*. 2018, 72(4). 45.

Katko, Tapio S., Laura Inha, and Riikka Rajala. "Vesihuolto yhdyskuntien ympäristön turvaajana: uskomuksia ja todellisuuksia". *Ympäristökasvatus*. 2019. (2).

Kerokoski, Olli, Tommi Rantala and Antti Nurmikolu "Deterioration mechanisms and life cycle of concrete monoblock railway sleepers in Finnish conditions". *WCRR 2016 Proceedings: 11th World congress on railway research, 29.5-2.6.2016, Milano*. 2016.

Knuuti, Mika and Tim Länsivaara. "Variation of CPTu-based transformation models for undrained shear strength of Finnish clays". *Georisk*. 2019, 13(4). 262-270. <https://doi.org/10.1080/17499518.2019.1644525>

Koivisto, K. et al. "Commercialising reclaimed materials in earthworks – guidelines for productization and the process of appending these materials in the Finnish national code of practice". *Proceedings of the 17th Nordic Geotechnical Meeting Reykjavik Iceland: Challenges in Nordic Geotechnics 25th - 28th of May*. Reykjavik: Icelandic Geotechnical Society. 2016.

Köliö, Arto et al. *Betonirakenteiden korjausohjeet 2016, by 41 Suomen Betoniyhdistys r.y.* 2016.

Kolisaja, Pauli and Antti Kalliainen. "Modelling of plastic culvert and road embankment interaction in 3D". *Procedia Engineering*. 2016, 143. 427-434. <https://doi.org/10.1016/j.proeng.2016.06.054>

Kolisaja, Pauli. "Nysse tulee - Tampere3 nimittäin". *Geofoor*. 2018, (48). 27-28.

Koulouri, Alexandra et al. "Methodology to estimate ionospheric scintillation risk maps and their contribution to position dilution of precision on the ground". *JOURNAL OF GEODESY*. 2020. 94. <https://doi.org/10.1007/s00190-020-01344-0>

Kovalainen, Ville, Mikko Kylliäinen and Timo Huhtala "A method for design of sound insulation of glazed balconies against traffic noise". *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). 2016, 3834-3841.

Kuula, Pirjo et al. *Selvitys UUMA-materiaalien teknisen kelpoisuuden arviointiin liittyvistä testausstandardeista ja -menetelmistä (1. vaihe), 29.12.2014 UUMA 2, Uusiomateriaalit maarakentamisessa ohjelma 2013-2015*. Ramboll. 2015.

Kuula, Pirjo *Tien ja radan sitomattomissa rakennekerroksissa käytettävien kiviainesten lujuuden ja hienontumisen tutkiminen : kirjallisuusselvitys 2015* udg. Liikenneviraston tutkimuksia ja selvityksiä; 68. Helsinki: Liikennevirasto. 2015.

Kuuluvainen, Heino et al. *Vertical profiles of lung deposited surface area concentration of particulate matter measured with a drone in an urban street canyon*. 2018.

Kuuluvainen, Heino et al. *Vertical profiles of lung deposited surface area (LDSA) concentration measured with a drone in an urban street canyon (MP-17)*. 2018.

Kylliäinen, Mikko et al. "A laboratory listening experiment on subjective and objective rating of impact sound insulation of concrete floors". *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). 2016, 894-902.

Länsivaara, Tim and Mika Knuuti "A proposal for some modifications of EN 1997-1 design approaches". *Fifth International Symposium on Geotechnical Safety and Risk (ISGSR): Rotterdam, The Netherlands 13-16 October 2015*. IOS Press. 2015, 486-491.

Länsivaara, Tim "Varmuuden kohdentaminen geotekniikassa, miten Eurokoodeja voisi kehittää?". *Geotekniikan päivä 2015*. SGY. 2015.

Länsivaara, Tim. "Foreword". *HKIE Transactions*. 2018. 25(2). <https://doi.org/10.1080/1023697X.2018.1482593>

Länsivaara, Tim and Leena Korkiala-Tanttu "Otat näytteen vain kerran". *Geotekniikan Päivä*. SGY. 2018.

Latvala, Juha *Konvektiivinen lämmönsiirtyminen ratapenkereessä* Liikenneviraston tutkimuksia ja selvityksiä. Liikennevirasto. 2015.

Latvala, Juha, Antti Nurmikolu, and Heikki Luomala. "Problems with Railway Track Drainage in Finland". *Procedia Engineering*. 2016, 143. 1051-1058. <https://doi.org/10.1016/j.proeng.2016.06.098>

Lehtonen, V. and T. Länsivaara "Back-calculation of the Saint-Alban A test embankment with a new modelling approach in LEM". *Proceedings of the The 17th Nordic Geotechnical Meeting, Reykjavik Iceland: 25th - 28th of May 2016*. 2016, 691-699.

Leppänen, Minna , Juha Laasonen and Tero Välisalo "Finnish mine waste disposal areas". *Geosynthetics Mining Solutions 2014*. Infomine. 2014.

Leppänen, Minna , Tero Välisalo and Juha Laasonen, ed. "Liite 6: Yleistä kaivannaisjätealueista ja patoturvallisuudesta". *Kaivosten stressitesti 2013*. Ympäristöministeriön raportteja. Ympäristöministeriö. 2014.

Leppänen, Minna M. and Pirjo Kuula *Acceptability of contaminated soils and waste materials in landfill structures*. 2016.

Loukola-Ruskeeniemi, Kirsti et al. *Kiviaines- ja luonnonkiviteollisuuden kehitysnäkymät* Työ- ja elinkeinoministeriön julkaisuja; 54. Helsinki: Työ- ja elinkeinoministeriö. 2015.

Luomala, Heikki, Ossi Peltokangas and Antti Nurmikolu "Stiffmaster - A continuous track stiffness measurement device". *GEORAIL 2014 : 2nd International symposium - Railway geotechnical engineering, 6-7 November 2014, France*. IFSTTAR. 2014, 109-118.

Luomala, Heikki , *Ballast bed*, 2016.

Luomala, Heikki , *Sleepers*, 2016.

Luomala, Heikki , *Älypölkky, radan monitorointi, kreosoottipölkyn korvaavat vaihtoehdot*, 2016.

Luomala, Heikki , *Tutkimusohjelma Elinkaaritehokas RAta (TERA): Kokonaisvaltainen ote ratarakennetutkimukseen*, 2016.

Malaska, Mikko and Rauno Heikkilä. "Editorial to "The best papers from the 32nd International Symposium on Automation and Robotics in Construction and Mining (ISARC 2015)"". *Automation in Construction*. 2016, 71. 1. <https://doi.org/10.1016/j.autcon.2016.08.045>

Mardalizad, Aria et al. "Numerical modeling of the tool-rock penetration process using FEM coupled with SPH technique". *JOURNAL OF PETROLEUM SCIENCE AND ENGINEERING*. 2020. 189. <https://doi.org/10.1016/j.petrol.2020.107008>

Mönkäre, Tiina J., Marja R. T. Palmroth, and Jukka A. Rintala. "Characterization of fine fraction mined from two Finnish landfills". *Waste Management*. 2016, 47A. 34-39. <https://doi.org/10.1016/j.wasman.2015.02.034>

Pakkala, Toni , Antti-Matti Lemberg, and Jukka Lahdensivu *The effect of climate change on freeze-thaw durability of concrete structures in Finland*. 2016. 1 p.

Parviainen, Annika et al. "Arsenic in bedrock, soil and groundwater - The first arsenic guidelines for aggregate production established in Finland". *Earth-Science Reviews*. 2015, 150. 709-723. <https://doi.org/10.1016/j.earscirev.2015.09.009>

Pressacco, Martina and Timo Saksala "Numerical modelling of fracture processes in thermal shock weakened rock". Litvinenko, Vladimir (ed.). *Geomechanics and Geodynamics of Rock Masses, Volume 1 Proceedings of the 2018 European Rock Mechanics Symposium*. CRC Press. 2018, 883-888.

Pressacco, Martina and Timo Saksala "Numerical modelling of thermal drilling of rock by heating-cooling cycle". *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*. Proceedings in Earth and geosciences. CRC Press. 2020, 2547-2553. <https://doi.org/10.1201/9780367823177>

Rantala, Tommi , Olli Kerokoski and Antti Nurmikolu. "Betonisten ratapölkkyjen väsytytkuormituskokeet". *Rakenteiden mekaniikka*. 2015, 48(1). 18-33.

Ruuska, Tiina and Juha Vinha "Laastin ja betonin lämmönjohtavuuden ja ominaislämpökapasiteetin määrittäminen lämpövirtalevyllä". and Vinha, Juha Ruuska, Tiina (editors). *Rakennusfysiikka 2015. Uusimmat tutkimustulokset ja hyvät käytännön ratkaisut. 20.-22.10.2015, Tampere*. Tampere: Tampereen teknillinen yliopisto, rakennustekniikan laitos, rakennetekniikka. 2015, 227-232.

Saari, Arto , *Näkökulma-kolumni: Putkiremontit kestävät aivan liian kauan*, Sanoma Talotekniikkajulkaisut Oy, 2016.

Saksala, Timo, Mikko Hokka, and Veli-Tapani Kuokkala. "Numerical 3D modelling of the effects of strain rate and confining pressure on the compressive behavior of Kuru granite". *Computers and Geotechnics*. 2017, 88. 1-8. <https://doi.org/10.1016/j.compgeo.2017.03.004>

Saksala, Timo, Mikko Hokka, and Veli-Tapani Kuokkala "Continuum modelling of dynamic rock fracture under triaxial confinement". *14th International Conference on Fracture, Proceedings of ICF 14 : Rhodes, Greece, June 18-23, 2017*. 2017.

Saksala, Timo. "Numerical modelling of dynamic spalling test on rock with an emphasis on the influence of pre-existing cracks". *Rakenteiden mekaniikka*. 2017, 50(2). 63-76. <https://doi.org/10.23998/rm.65303>

Saksala, Timo. "Numerical modelling of rock materials with polygonal finite elements". *Rakenteiden mekaniikka*. 2017, 50(3). 216-219. <https://doi.org/10.23998/rm.64643>

Saksala, Timo et al. "3D finite elements modelling of percussive rock drilling: Estimation of rate of penetration based on multiple impact simulations with a commercial drill bit". *Computers and Geotechnics*. 2018, 99. 55-63. <https://doi.org/10.1016/j.compgeo.2018.02.006>

Saksala, Timo "Numerical modelling of rock fracture with a Hoek-Brown viscoplastic-damage model implemented with polygonal finite elements". Litvinenko, Vladimir (ed.). *Geomechanics and Geodynamics of Rock Masses, Volume 1: Proceedings of the 2018 European Rock Mechanics Symposium*. CRC Press. 2018, 903-908.

Saksala, Timo "Numerical modelling of thermal spallation of rock". *Proceedings of XII Argentine Congress on Computational Mechanics (MECOM2018)* . Mecánica Computacional; 48. 2018, 1567-1574.

Saksala, Timo. "On the Strain Rate Sensitivity of Coarse-Grained Rock: A Mesoscopic Numerical Study". *Rock Mechanics and Rock Engineering*. 2019, 52(9). 3229–3240. <https://doi.org/10.1007/s00603-019-01772-1>

Saksala, Timo "Numerical modelling of underground tunnel in rock under seismic loading with polygonal finite elements". *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*. Proceedings in Earth and geosciences . CRC Press. 2019, 4808-4814. <https://doi.org/10.1201/9780429031274>

Saksala, Timo and Mahmood Jabareen. "Numerical modeling of rock failure under dynamic loading with polygonal elements". *International Journal for Numerical and Analytical Methods in Geomechanics*. 2019, 43(12). 2056-2074. <https://doi.org/10.1002/nag.2947>

Saksala, Timo. "Numerical modelling of pore-fluid-enhanced thermal spallation in granitic rock". *Rakenteiden mekaniikka*. 2020, 53(2). 100-109. <https://doi.org/10.23998/rm.77645>

Saksala, Timo. "Thermal shock assisted percussive drilling: A numerical study on the single-bit axisymmetric case". *International Journal of Rock Mechanics and Mining Sciences*. 2020. 132. <https://doi.org/10.1016/j.ijrmms.2020.104365>

Saksala, Timo and Adnan Ibrahimbegovic. "Thermal shock weakening of granite rock under dynamic loading: 3D numerical modeling based on embedded discontinuity finite elements". *International Journal for Numerical and Analytical Methods in Geomechanics*. 2020, 44(13). 1788-1811. <https://doi.org/10.1002/nag.3107>

Saksala, Timo. "Demolition of concrete by thermal shock spallation: a mesoscopic numerical study based on embedded discontinuity finite elements". *INTERNATIONAL JOURNAL OF FRACTURE*. 2020. <https://doi.org/10.1007/s10704-020-00474-y>

Saksala, Timo. "3D numerical modelling of thermal shock assisted percussive drilling". *Computers and Geotechnics*. 2020. 128. <https://doi.org/10.1016/j.compgeo.2020.103849>

Sekki, Pauli, Timo Karvinen, and Juha Vinha. "Moisture behavior of external insulated precast concrete wall panels". *Journal of Building Physics*. 2020. <https://doi.org/10.1177/1744259120925850>

Selänpää, Juha et al. "Problems related to field vane testing in soft soil conditions and improved reliability of measurements using an innovative field vane device". *Landslides in Sensitive Clays: From Research to Implementation. Advances in Natural and Technological Hazards Research*. Springer. 2017, 121-131. https://doi.org/10.1007/978-3-319-56487-6_10

Selänpää, Juha et al. "Evaluation of existing CPTu-based correlations for the undrained shear strength of soft Finnish clays". *Cone Penetration Testing 2018: Proceedings of the 4th International Symposium on Cone Penetration Testing (CPT'18)*. CRC Press. 2018, 571-577.

Silvast, Mika et al. "Condition-Based Track Maintenance and Rehabilitation Design Using Combined Data Analysis". *GEORAIL 2014 : 2nd International symposium - Railway geotechnical engineering, 6-7 November 2014, France*. Ranska: IFSTTAR. 2014, 649-656.

Sørensen, Sara N. et al. *Identifying criteria for environmental risk assessment models at different stage-gates of nano-material/product innovation considering requirements of various stakeholders (TH083)*. 2018.

Sormunen, Laura Annika et al. "Combining mineral fractions of recovered MSWI bottom ash: improvement for utilization in civil engineering structures". *Waste and Biomass Valorization*. 2016. <https://doi.org/10.1007/s12649-016-9656-4>

Sormunen, Laura Annika and Pauli Kolisoja. "Mechanical properties of recovered municipal solid waste incineration bottom ash: the influence of aging and changes in moisture content". *Road Materials and Pavement Design*. 2018, 19(2). 252-270. <https://doi.org/10.1080/14680629.2016.1251960>

Tarvainen, Timo et al. *ASROCKS-Hankkeen heikkouuttomenetelmien vertailu* GEOLOGIAN TUTKIMUSKESKUS. 2014.

Thakur, Vikas et al. "Determination of remoulding energy of sensitive clays". *Landslides in Sensitive Clays: From Research to Implementation. Advances in Natural and Technological Hazards Research*. Springer. 2017, 97-107. https://doi.org/10.1007/978-3-319-56487-6_9

Tuominen, Eero and Juha Vinha "Laastien vedenimukertoimen määrittämisen virhelähdekokeet". and Vinha, Juha Ruuska, Tiina (editors). *Rakennusfysiikka 2015. Uusimmat tutkimustulokset ja hyvät käytännön ratkaisut. 20.-22.10.2015, Tampere*. Tampere: Tampereen teknillinen yliopisto, rakennustekniikan laitos, rakennetekniikka. 2015, 239-244.

Tuominen, Eero and Juha Vinha "Kapillaaristen vedenimuominaisuuksien määrittämiseen sopivan vapaan vedenimukoelaitteiston kehittäminen". and Vinha, Juha Ruuska, Tiina (editors). *Rakennusfysiikka 2015. Uusimmat tutkimustulokset ja hyvät käytännön ratkaisut. 20.-22.10.2015, Tampere*. Tampere: Tampereen teknillinen yliopisto, rakennustekniikan laitos, rakennetekniikka. 2015, 233-238.

Tuominen, Jyrki and Tarmo Lipping "Spatial variability of reed bed spectra in Olkiluoto Island". *2016 IEEE International Geoscience and Remote Sensing Symposium (IGARSS),: July 10-15, Beijing, China*. IEEE International Geoscience and Remote Sensing Symposium Proceedings. IEEE. 2016, 7188-7191. <https://doi.org/10.1109/IGARSS.2016.7730875>

Vatanshenas, A. et al. "Stress-strain hysteresis shape estimation of different soils using deformation-history integral (DHI) model". *MATERIALS PHYSICS AND MECHANICS*. 2020, 44(2). 221-228. https://doi.org/10.18720/MPM.4422020_6

Vuorimies, Nuutti et al. *Tierakenteen rasittuminen yli 76 tonnin HCT-yhdistelmien koekuormituksissa vuosina 2015 - 2017: Liikenneviraston tutkimuksia ja selvityksiä 63/2018* Liikennevirasto. 2018.

Zwinger, Thomas, Juha Hartikainen and Denis Cohen *A High-resolution Coupled Permafrost - Ice Sheet Model*. 2018. 1 p.