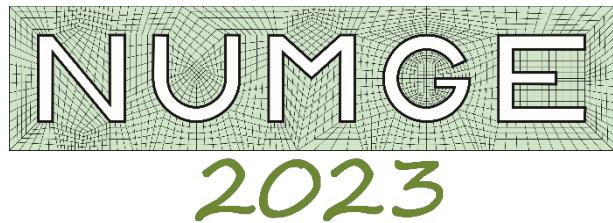


**Imperial College
London**



10th European Conference on Numerical Methods in Geotechnical Engineering

26 – 28 June

@ Imperial College London, London, UK

Preface

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Welcome and introduction

Organising Committee and Editorial Board



Lidija Zdravkovic



Stavroula Kontoe



David Taborda



Katerina Tsiamposi

It was our great pleasure to welcome authors, guests and sponsors to NUMGE 2023 – the 10th edition of the European Conference on Numerical Methods in Geotechnical Engineering – and to host this event in person at Imperial College. The Editorial Board accepted 267 general papers, 241 of which were presented orally over the three conference days and in four parallel sessions. Three Keynote and nine Theme lectures also featured in the conference programme. We were particularly delighted to see an increased participation of research students, at around 40%, compared to previous conferences in this series, as well as an increased participation of our industry colleagues who brought to the programme a range of practical applications of numerical methods. We are grateful to the ERTC7 Scientific Committee, to our Technical Advisory Panel and to many authors for their time and effort in providing prompt and comprehensive peer reviews, enabling us to develop such a full conference programme. For the first time the conference proceedings are published as open access, hosted by the ISSMGE Open Library. The list of papers is presented in sessions / themes of the conference programme, including a handful of papers at the end of the list that were registered but authors could not travel to London to present. We acknowledge the great support received from Alexandros Tsavalas and his team in helping us navigate this recently available publishing platform. We thank our Sponsors for their generous support and exhibition stands throughout the conference, which were focal points for interaction with delegates. The excellent administrative support was provided by Ulrika Wernmark and her team from the Continuous Professional Development office at Imperial College.

NUMGE 2023 inaugurated the ISSMGE TC 103 *Scott Sloan Honour Lecture*, in memory of the late Professor Scott Sloan from the University of Newcastle in Australia. Scott's lifelong research was dedicated to the development of numerical methods for application to geotechnical engineering and he was a core member of the ERTC7, among many of his other professional contributions. TC 103 elected Professor David Potts from Imperial College to deliver this first lecture, as part of the dedicated Memorial Session on Tuesday 27th June. This session was sponsored by Elsevier, also presenting the *Scott Sloan Best Paper Awards* for 2021, for papers published in their *Computers and Geotechnics* journal of which Scott was the Editor-in-Chief for many years.

We hope that delegates enjoyed the conference and the venue which is situated in one of London's finest locations, adjacent to many historical and cultural landmarks of the city.

for the Organising Committee

Lidija Zdravkovic

NUMGE 2023 Chair and Lead Editor

MONDAY 26TH JUNE

Welcome address: 09:00 – 09:30 – CAGB 200

Lidija Zdravkovic, Helmut Schweiger

Keynote Lecture 1: 09:30 – 10:10 – CAGB 200

Chair: Lidija Zdravkovic

433 - Numerical modelling in geotechnical design of offshore infrastructure

Susan Gourvenec

SESSION 1 – MONDAY 26TH JUNE – CAGB 200

Session 1a: 10:30 – 12:30 - Constitutive modelling

Chair: Orestis Adamidis

32 - Direct integration method for hyperplastic models

Seyed Ali Ghoreishian Amiri, Davood Dadras, Gustav Grimstad

62 - A computationally efficient consistent tangent operator for explicit stress integration techniques

Lluís Monforte, Mohamed Rouainia

155 - Numerical performance of different order explicit integration schemes with substepping and automatic error control

Marti Lloret-Cabot, Daichao Sheng

30 - Accuracy and efficiency of explicit substepping scheme for complex soil models in finite element framework

Yuepeng Dong

338 - An insight into the thermodynamics-based elasto-plastic coupling of clays: role of voids and fabric anisotropy

Fabio Rollo, Angelo Amorosi

178 - A coupled-hyperelastic constitutive approach for modelling the mechanical behaviour of crushable granular soils

Nazanin Irani, Merita Tafili, Luis Felipe Prada, Torsten Wichtmann

284 - Investigation of a hypoplastic model with two different inter-granular strain extensions for undrained behaviour of silty sand

Abdulaziz Osman Abdelkadr, Oliver Reul, Torsten Wichtmann

240 - A review of parameters for hypoplastic constitutive models

Amir Mosallaei, András Mahler

Theme Lecture 1: 13:30 – 14:00

Chair: Achilleas Papadimitriou

436 - Micro-inspired constitutive modelling of clays

Angelo Amorosi

Session 1b: 14:00 – 15:30 – Constitutive modelling

Chair: Achilleas Papadimitriou

[120](#) - The anisotropic preconsolidation of clay in modelling soil-structure-interface behaviour
Sabine Gehring, Andrzej Niemunis, Hans Henning Stutz

[278](#) - Extended subloading surface anisotropic model for cyclic behaviour of structured clays
Hesamoddin Dejaloud, Mohammad Rezania

[162](#) - A subloading surface clay and sand model
Paul José Pinedo Vilcahuamán, Lluis Monforte, Marcos Arroyo, Antonio Gens

[141](#) - A non-linear kinematic hardening model for ratcheting in clays
David Abadias, Emil Ushev, Lidija Zdravkovic

[422](#) - Modeling the cyclic degradation of clays with an anisotropic bounding surface plasticity model
Francesca Palmieri, Mahdi Taiebat

[44](#) - Challenges and opportunities in teaching constitutive models in geotechnical courses
Gertraud Medicus, Katerina Ziropoulou, Nejan Huvaj

Session 1c: 16:00 – 18:00 – Constitutive modelling

Chair: Giuseppe Pedone

[87](#) - Evaluation of three advanced constitutive models for cyclic loading of sands
Dimitrios Konstantinidis, Christopher Martin, Harvey Burd

[114](#) - Impact of undrained induced anisotropy on the liquefaction resistance of sand
Merita Tafili, Torsten Wichtmann

[343](#) - Assessment of the state parameter used in two-surface plasticity models
Abhinanda Dilip, Orestis Adamidis

[296](#) - Constitutive model with reversal surfaces for granular soils under monotonic and cyclic loading
Taxiarchoula Limnaiou, Achilleas Papadimitriou

[297](#) - Validation of a new constitutive model with reversal surfaces for the analysis of liquefaction-induced phenomena
Taxiarchoula Limnaiou, Achilleas Papadimitriou

[242](#) - On the calibration and application of the NorSand model
Emilia Castillo Fuentes, Lidija Zdravkovic, David M Potts

[415](#) - Automatic parameter calibration of two sophisticated soil models based on monotonic and cyclic tests on sand
Frederik Brosz, Jan Machacek, Hauke Zachert

[389](#) - Automatic calibration of the SANISAND parameters for a granular material using multi-objective optimization strategies
Sai Sri Harsha Vallurupalli, Debdeep Sarkar, Meisam Goudarzy, Luis Felipe Prada, Arash Lavasan, Torsten Wichtmann

SESSION 2 - MONDAY 26TH JUNE – SKEM 201

Session 2a: 10:30 – 12:30 – Tunnelling and mining applications

Chair: Charles Augarde

[6](#) - Influence of the pillar width on the construction sequence of twin tunnels

Antonio Pedro, Jose Grazina, Jorge Almedia e Sousa

[82](#) - Results of a benchmark exercise of prediction of tunnel-pile interaction: the TULIP project

Emmanuel Bourgeois, Nicolas Berthoz, Wassim Mohamad, Fabien Szymkiewicz, Alain Le Kouby, Denis Branque, Agathe Michalski, Charles Kreziak, Laurent Soyez

[175](#) - The influence of soil stiffness anisotropy and permeability anisotropy on the long-term response of a tunnel

Agustin Ruiz Lopez, Katerina Tsiamposi, Jamie Standing, David M Potts

[310](#) - Some observations on numerical modelling of tunnelling-induced soil movements by a displacement-controlled technique

Wenhui Yang, Daniela Boldini, Dingwen Zhang

[340](#) - Modelling tunnelling-induced damage in framed structures with masonry infill walls

Chiara Spaggiari, Sinan Acikgoz, Daniela Boldini

[339](#) - Calibration of a simplified soil-structure interaction model for rapid assessment of tunnelling-induced damage in masonry buildings founded on shallow footings

Marialuigia Sangirardi, Burcu Gulen, Sinan Acikgoz, Harvey Burd

[202](#) - An approach for geotechnical numerical modelling of tunnels lining longitudinal behaviour

Helena Castellvi, Xavier Torelló Ciriano, Angel Denia, Laura Baró López, Dominik Hoerle

[91](#) - Effect of Pipes Used as Advance Support Measure on the Development of Load-Bearing Ring of Soil

Iman Bathaeian, Barbara Schneider-Muntau

Theme Lecture 2: 13:30 – 14:00

Chair: Phil Vardon

[443](#) - Modelling landslides with material point method

Gaia di Carluccio & Nuria Pinyol

Session 2b: 14:00 – 15:30 – FEM-FDM-DEM-MPM

Chair: Phil Vardon

[57](#) - A ghost-stabilised material point method for large deformation geotechnical analysis

William Coombs

[67](#) - Assessment of different Material Point Methods with small and large strain constitutive models

Mian Xie, Pedro Navas, Suzana Lopez-Querol

[281](#) - A Jacobi eigenvalue solver for material point models and one-dimensional consolidation simulations of a soil layer

Cristian David Rodríguez Lugo, Lucian Canales Brenlla, Luis Felipe Prada Sarmiento, Torsten Wichtmann

195 - Cone resistance and soil state of tailing sand deposits using the Material Point Method
Juan Ayala, Mario Martinelli, David Reid, Andy Fourie

289 - Replication of fall cone test in marine clay with a Generalized Interpolation Material Point Method simulation
Debasis Mohapatra, Zhongsen Li, Maarit Saresma, Joonas Virtasalo, Wojciech Solowski

35 - An open-source Julia code for geotechnical MPM
Nathan Gavin, Robert Bird, William Coombs, Charles Augarde

Session 2c: 16:00 – 18:00 – Machine learning & Artificial Intelligence

Chair: Mohammad Rezania

111 – Automated CPT interpretation and modelling in a BIM/Digital Twin environment
Ronald B. J. Brinkgreve, Franz Tschuchnigg, Anita Laera, Sandro Brasile

170 – 'Real-time' back analysis of a shaft excavation in London Clay using the propped contiguous piled wall
Ying Chen

303 – Applying the observational method to a deep braced excavation using an artificial neural network
Jose Ferrero, Agustin Ruiz Lopez, David M. G. Taborda, Sandro Brasile

80 – Numerical simulation and optimization of dike geometry using multi-objective evolutionary algorithm NSGA-II
Kacper Cerek, Jürgen Grabe

63 – Simulated site amplification models for central and eastern North America using deep learning technique
Okan İlhan, Youssef Hashash

70 – Expansion of an automated system for determining soil parameters using in-situ tests
Islam Marzouk, Franz Tschuchnigg, Ronald B. J. Brinkgreve

312 – Prediction of Soil-Water Characteristic Curve using optimised machine learning approaches
Majidreza Nazem, Navid Kardani, Sara Moridpour, Annan Zhou

SESSION 3 - MONDAY 26TH JUNE – SKEM 164

Session 3a: 10:30 – 12:30 – Dams, embankments and slopes
Chair: Konstantinos Georgiadis

161 - Numerical assessment of drilling-induced static liquefaction triggering of Feijão Dam I
Alfredo Arenas, David Reid, Riccardo Fanni, Kyle Smith, Andy Fourie

215 - FDM -DEM modelling of a rockfill dam with dry-stone pitching: a case study
Ali Haidar, Eric Vincens, Fabian Dedecker, Roland Plassart

302 - Investigating the impact of the climatic boundary conditions on the landslide reactivation of a clay slope: the Fontana Monte case study
Annamaria di Lernia, Gaetano Elia, Federica Cotecchia

189 - Finite element modelling of a creeping slope using viscohypoplasticity
Jan Jerman, David Mašín

266 - The effect of creep-induced settlement and strength gain on flood embankments
Danette Tan, Lidija Zdravkovic, David M Potts, Truong Le

298 - Slope stability assessment in sensitive clay with an advanced constitutive model
Carolina Sellin, Minna Karstunen

313 - A numerical study of time effects on the stability of a test embankment on sensitive soft clay
Hannes Hernvall, Mats Karlsson, Minna Karstunen

85 - Calibration of constitutive models for finite element analyses of embankments on peat
Marco D'Ignazio, Tim Länsivaara, Santeri Sainio, Harun Kursat Engin

Theme Lecture 3: 13:30 – 14:00

Chair: Angeliki Grammatikopoulou

438 - Accounting for the effect of cyclic loading in design of offshore structures
Hans-Petter Jostad

Session 3b: 14:00 – 15:30 – Offshore geotechnics

Chair: Angeliki Grammatikopoulou

88 - Impact of cyclic degradation of soil properties on the performance of monopile foundations for offshore wind turbines: a qualitative numerical study
Marco D'Ignazio, Carlos Molina Mesa, Manuela Kanitz, Andrés Cortez, Sebastián Matías Bascuñán Chaparro

259 - Performance of SANISAND-MS in modelling cyclic response of suction buckets in sand
Anamitra Roy, Haoyuan Liu, Andrea Diambra, Shiao Huey Chow, Britta Bienen

271 - Floating offshore wind turbine piles under horizontal cyclic loading: calibration and performance of advanced soil constitutive models
Rami Chalhoub, Orianne Jenck, Christophe Dano

345 - Numerical Modelling of Stiffness and Damping Evolution of Offshore Monopile Foundations Under Lateral Cyclic Loading
Iwinosa Aghedo, Tom Charlton, Mohamed Rouainia

336 - Numerical analyses of a multiline ring anchor for floating offshore wind turbines in sand
Ragini Gogoi, Anas Aldawwas, Charles Aubeny, Alejandro Martinez, Lin Huang, Don DeGroot, Sanjay Arwade, Ryan Beemer

337 - Nonlinear finite-element analysis of axially loaded piles driven in chalk
Kai Wen, Stavroula Kontoe, Richard Jardine, Tingfa Liu, Liru Pan

Session 3c: 16:00 – 18:00 – Offshore geotechnics

Chair: Lars Andresen

11 - DEM modelling of screw piles as foundations for floating offshore wind turbines
Benjamin Cerfontaine, Matteo Ciantia, Mike Brown, Y. Sharif

112 - Large deformation numerical analysis of rock permeability influence on anchor performance for offshore renewable applications
Alessio Genco, Matteo Ciantia, Mike Brown, Marco Previtali, Ana Ivanovic, Nick Cresswell

129 - Integrated numerical modelling of soil-anchor-mooring line-floater response for floating offshore wind
Katherine Kwa, Oscar Festa, David White, Adam Sobey, Susan Gourvenec

138 - Validation of REDWIN model in sandy soil under various drainage conditions
Haoyuan Liu, Hans Petter Jostad, Nallathamby Sivasithamparam

139 - Numerical limit analyses of the vertical capacity of plate anchors in clay
Elena Varela, Marina Miranda, Jorge Castro, Almudena da Costa, Jorge Cañizal

184 - System for automated design of offshore rock berms
Kristian Krabbenhoft, Jorgen Krabbenhoft, Christian Olsen

322 - Numerical installation of OE piles in soft rocks within the GPFEM framework
Marco Previtali, Matteo Ciantia, Thomas Riccio

264 - Numerical study on the penetration behaviour of drag-embedded anchor
Yu-Shu Kuo, Chao-Ming Chi, Yuhsiu Tseng, Wei-Sin Khor, Shang-Chun Chang, Bing-Xian Jin

SESSION 4 - MONDAY 26TH JUNE – SKEM 301

Session 4a: 10:30 – 12:30 – FEM-FDM-DEM-MPM

Chair: Mahdi Taiebat

210 - Investigations on simulation of finite slope failure using image analysis and arbitrary Lagrangian-Eulerian
Kritesh Chouhan, Jitesh T. Chavda

151 - Evaluation of a Gauss integration scheme in MPM for strain-dependent soils
Mario Martinelli, Guido Remmerswaal

143 - Numerical modelling of drained and undrained cone penetration tests
Xingyi Wu, Mason Ghafghazi, Zhenyu Liu, Yinghui Tian, Shiao Huey Chow

394 - Effects of drainage conditions on state parameter inversion from CPTu
Katia Boschi, LLUÍS MONFORTE, Marcos Arroyo, Josep Maria Carbonell, Antonio Gens

252 - The role of soil constitutive model in simulation of cone penetration test
Sara Moshfeghi, Mahdi Taiebat, Arcesio Lizcano

125 - Cone penetration in brittle, lightly over-consolidated soils: a numerical perspective
Lluís Monforte, Marcos Arroyo, Antonio Gens

237 - The effects of partial drainage on the interpretation of pore pressure dissipation test data: a numerical study
Ryan Chia, Ze Zhou Wang, Siang Huat Goh

395 - Micro-polar periporomechanics for shear bands and cracks in porous media under dynamic loads
Xiaoyu Song, Hossein Pashazad

Session 4b: 14:00 – 15:30 – Shallow & deep foundations

Chair: Emmanuel Bourgeois

131 – Undrained uplift capacity of single helical piles and helical pile groups
Nikitas Stefanopoulos, Konstantinos Georgiadis, Themistoklis Nikolaidis

109 – Finite element formulations for implicit beam-to-solid coupling: numerical obstacles and solution strategies

Andreas-Nizar Granitzer, Franz Tschuchnigg

256 – Uplift capacity of strip plate anchors in unsaturated sand

Mansha Mushtaq, Jagdish Prasad Sahoo

34 – Calculation of soil volume loss caused by drilling of anchors

Thomas Sandene, Einar John Lande, Hilde Aas Nøst

48 – Modelling pile installation in soft natural clays

Jonatan Isaksson, Mats Karlsson, Jelke Dijkstra

381 – Influence of pipe arrangement and improved thermal conductivity on the response of thermo-active piles

David M. G Taborda, Marina Schnaider Bortolotto, Ryan Y. W. Liu

Session 4c: 16:00 – 18:00 – FEM-FDM-DEM-MPM

Chair: David Reid

171 - Coupled experimental and numerical approaches in bender element testing of geomaterials

Ionut Moldovan, António Gomes Correia, Natàlia Climent, Abdalla Almukashfi, MJ Roshan, Marcos Arroyo

292 - Numerical investigation of the equipment set-up in triaxial testing of soft soils

Ching-Yu Chao, Cristina Jommi, Stefano Muraro

16 - Finite element modelling of direct simple shear tests with pre-failure episodic shearing and consolidation

Noor Laham, Katherine Kwa, Susan Gourvenec, David White, Yusuke Suzuki

179 - Micro-mechanical response of transversely isotropic samples under cyclic loading

Mohammadjavad Salimi, Merita Tafili, Nazanin Irani, Torsten Wichtmann

216 - Evaluation of continuum modelling approaches for reinforced concrete in geotechnical applications

Ahmad Mubarak, Jonathan Knappett, Mike Brown

169 - Effect of K0 on the settlement of a raft foundation: a numerical study

Hesham Aldaikh, Indrasenan Thusyanthan, Anastasios Batilas, Krishna Neaupane, Finlay Leibrock

41 - Investigation of numerical modelling approaches for diaphragm walls with support of inverse parameter identification

Hauke Juergens, Sascha Henke

28 - A novel approach towards automated derivation of two-dimensional numerical models from geotechnical building information models (BIM)

Johannes Beck, Sascha Henke

18:00 - END OF CONFERENCE SESSIONS – MONDAY 26TH JUNE

18:00 – 20:00 – Welcome Reception – SKEM BOSS space

TUESDAY 27TH JUNE

Keynote Lecture 2: 08:30 – 09:10 – CAGB 200

Chair: Hans-Petter Jostad

434 - From theory to practice - numerical modelling of geostructures on soft natural clays

Minna Karstunen

SESSION 5 - TUESDAY 27TH JUNE – CAGB 200

Session 5a: 09:20 – 10:35 – Coupled analysis

Chair: William Coombs

36 – Coupled finite element analysis of a partially saturated slope in Norway

Viviana Mangraviti, Vittoria Capobianco, Luca Piciullo, Jelke Dijkstra

285 – Numerical analysis of embedded retaining walls with coupled hydro-mechanical zero-thickness interface elements

Liang Dong, Wenjie Cui, David M Potts, Lidija Zdravkovic

47 – Thermo-hydro-mechanical simulation of deep excavations in claystone

Saeed Tourchi, Miguel Mánica, Antonio Gens, Jean Vaunat

71 – Finite element modelling of multi-gas flow in expansive clay

Abhishek Gupta, Elke Jacops, Ayman Abed, Wojciech T. Solowski

89 – Modelling of hydraulic fracturing based on element-scale fluid-solid coupling using multiple local coordinate system

Yuxiao Wang, Akbar Javadi

Session 5b: 11:00 – 12:30 – Geotechnical earthquake engineering

Chair: Gaetano Elia

424 - Mutual interaction among three nearby shallow foundations

Enza Zeolla; Stefania Sica

324 - Numerical simulation of soil-structure interaction experiments on shallow founded structures for different mass configurations

Marios Koronides, Stavroula Kontoe, Lidija Zdravkovic, Athanasios Vratsikidis, Dimitris Pitilakis, Anastasios Anastasiadis, David M Potts

159 - 3D nonlinear dynamic finite element analysis of onshore wind turbines on pile foundation resting on liquefiable soils

Domenico Gaudio, Juntae Seong, Stuart Haigh, Giulia Viggiani, Gopal Madabhushi

238 - Seismic assessment of slopes: do the dynamic features of the landslide matter?

Davide Noè Gorini, Fabio Rollo

411 - The significance of ground motion duration in assessing lateral displacement of liquefiable slopes

Masoumeh Asgarpoor, Mahdi Taiebat

331- Importance of free field boundary conditions to the finite element modelling of surface topography effects on incident waves

Ricardo J.N. Azeiteiro , S. Brasile , T.A. Bui

Theme Lecture 4: 13:30 – 14:00

Chair: Stavroula Kontoe

[440](#) - Benefits and pitfalls of advanced numerical modelling in earthquake geotechnical engineering
Achilleas Papadimitriou

Session 5c: 14:00 – 15:30 – Geotechnical earthquake engineering

Chair: Stavroula Kontoe

[17](#) - A high-fidelity seismic intensity measure to assess dynamic liquefaction in tailings
Nicolas Labanda, Roberto Cier, Mauro Sottile

[307](#) - Impact of foundation layer characteristics on the seismic response of a tailings dam
David Solans, Stavroula Kontoe, Lidija Zdravkovic

[45](#) - Numerical investigations of the influence of initial static shear stress on the bi-directional loading of dense sand

Antal Csuka, Carlos Grandas-Tavera, Roberto Cudmani

[198](#) - Periodic random fields to perform site response and liquefaction susceptibility analysis
Jose Leon Gonzalez Acosta, Divya Varkey, Bram van den Eijnden, Michael Hicks

[208](#) - Numerical investigation of liquefaction susceptibility of sands considering fabric effects
Hilmi Bayraktaroglu, Jose Leon Gonzalez Acosta, Bram van den Eijnden, Mandy Korff, Michael Hicks

[183](#) - Dynamic plane strain testing as an alternative method to characterise cyclic direct simple shear experiment on sands

Raj Banerjee, Yogita M. Parulekar, Aniruddha Sengupta, Jayanta Chattopadhyay

SESSION 6 - TUESDAY 27TH JUNE – SKEM 201

Session 6a: 09:20 – 10:35 – FEM-FDM-DEM-MPM

Chair: Daniel Baretto

[37](#) - A time-to-fracture DEM model for simulating creep in rough crushable sand
Jiangtao Lei, Marcos Arroyo, Matteo Ciantia, Ningning Zhang

[142](#) - Calibration of cyclic soil degradation models through the discrete element method
Fedor Maksimov, Alessandro Tombari

[218](#) - Discrete numerical analysis of drained cyclic loading on a model sand
Alice Ezzeddine, Bogdan Cazacliu, Patrick Richard, Luc Thorel, Riccardo Artoni

[212](#) - Investigation of response of Cuxhaven sand under triaxial and ring shear boundary conditions using DEM
Anjali Uday, Andrés Peña-Olarte

[247](#) - DEM investigation of the performance of a bio-inspired selfburrowing probe in granular soils of varying gravity
Bowen Wang, Ningning Zhang, Raul Fuentes, Yuyan Chen, Alejandro Martinez

Session 6b: 11:00 – 12:30 – FEM-FDM-DEM-MPM

Chair: Marcos Arroyo

[65](#) - A new strategy for the initialization of MPM simulations

Meng Lu, Veronica Girardi, Mingliang Zhou, Francesca Ceccato

[251](#) - Flow liquefaction and large deformation analysis in a tailings dam using MPM and critical state-based material modelling

Erick Lino, Mahdi Taiebat, Arcesio Lizcano

[50](#) - Influence of leakage direction and pipe depth on the soil fluidisation using the MPM

Ali Monzer, Asaad Faramarzi, Alba Yerro, David Chapman

[420](#) - Numerical simulation for runout behaviour of sensitive clay landslides using the material point method

Zhongqiang Liu, Mingliang Zhou, Meng Lu, Amanda DiBiagio, Håkon Heyerdahl

[369](#) - Effect of strain softening on the prediction of post-failure runout in sensitive clay landslide

Zinan Ara Urmı, Ali Saeidi, Alba Yerro Colom, Rama Vara Prasad Chavali

[26](#) - The effect of finite layer thickness; a validation of MPM analysis by centrifuge testing

Cor Zwanenburg, Britt Wittekoek, Mario Martinelli, Etienne Alderlieste

Theme Lecture 5: 13:30 – 14:00

Chair: David Masin

[441](#) - Coupled thermo-hydro-mechanical behaviour of soils and applications in energy geotechnics

Jean-Michel Pereira

Session 6c: 14:00 – 15:30 – FEM-FDM-DEM-MPM

Chair: David Masin

[353](#) - A DEM based micromechanical study on influence of lateral boundaries on instability response of sand under biaxial shearing

Madhu Sudan Negi, Mousumi Mukherjee

[388](#) - A DEM study on the effect of inherent variability of assemblies of spherical particles

James Leak, Daniel Barreto

[316](#) - DEM modelling of a rotary CPT

Xiaotong Yang, Ningning Zhang, Rui Wang, Jian-Min Zhang, Raul Fuentes, Wengang Zhang

[261](#) - Influence of initial confining stress on the quasi-steady state

Syed Uzair Us Salam Shah, Roberto Cudmani, Andrés Peña

[386](#) - Numerical prediction of the installation of vibratory monopile foundations for offshore wind energy projects

Shreyas Giridharan, Dieter Stolle, Christian Moermann

[375](#) - DEM investigation of microscopic parameters influence on the sandy tailings mechanical behavior

Flávia Padovani, Leandro Rasmussen

SESSION 7 - TUESDAY 27TH JUNE – SKEM 164

Session 7a: 09:20 – 10:35 – Tunnelling and mining applications

Chair: Antonio Pedro

390 - The role of hydro-mechanical properties of the tail void grouting material in mechanized tunnelling
Danial Mohammadzamani, Arash Lavasan, Torsten Wichtmann

127 - Comparative numerical calculations in the context of tunnel design for nuclear waste repositories in Opalinus Clay

Aldo Madaschi, Julia Leuthold, Linard Cantieni, Lyesse Laloui

78 - A three-dimensional numerical modelling of an underground gallery excavation considering the influence of sedimentary rock cross-anisotropy

Panteleimon Rapanakis, Benoît Pardoen, Denis Branque, Jan Cornet, Gilles Armand

417 - Stability assessment of dual circular tunnels with different diameters along Hoek-Brown rock masses
Spandan Sahu, Gaurav Tiwari, Jagdish Prasad Sahoo

Session 7b: 11:00 – 12:30 – Reinforcement and ground improvement

Chair: Daniela Boldini

203 - Case study of reinforced earth embankments and rigid inclusions in soft estuarine alluvium
Matthew Brown

133 - The effect of stone columns on critical speed for high-speed railway lines

Jesús Fernández-Ruiz, Marina Miranda, Jorge Castro, Luis Medina, Alexandre Castanheira-Pinto

118 - Numerical modelling of stone columns installation in clay

Marina Miranda, Atefe Geramian, Jorge Castro, Mahmoud Ghazavi

268 - Intelligent placement of untooled rock to form precision structures using a weighted criterion

Alan Hoodless, Colin Smith

99 - Numerical Modelling Based Assessment on Performance Evaluation of Geocell-Reinforced Base Layer over Soft Subgrade

Sayanti Banerjee, B. Manna, J.T. Shahu

147 - Numerical analyses for the design of helical pile trackbed stabilisation

Lorenzo Allievi, Alex Wright, Alan Willoner

Theme Lecture 6: 13:30 – 14:00

Chair: David Taborda

442 - Incorporating finite element models in detailed geotechnical design: is complexity always justified?
Anton Pillai

Session 7c: 14:00 – 15:30 – Tunnelling and mining applications

Chair: David Taborda

214 - FEA meets construction: Sprayed concrete lined tunnels connecting existing subsurface assets at London Underground's Bank Station

Andrea Pamsl, Ali Nasekhian

219 - 3D FE back analysis of a staged SCL tunnel in London Clay using BRICK soil constitutive model
Pishun Tantivangphaisal, Anton Pillai, Duncan Nicholson

321 - 3D numerical analysis of the interaction between the Jubilee and Northern Line tunnels at Waterloo
Matt Stewart, Agustin Ruiz Lopez, Aikaterini Tsiamposi

192 - Numerical back analysis of Crossrail Bond Street Station sprayed concrete lined (SCL) concourse tunnel primary lining thickening layer longitudinal cracks
Jiang Su

419 - Numerical analysis of the effect of bilateral excavation and superstructure loading on existing metro twin tunnels
Aryan S Jajima, Vinay Kumar Singh, R. Ayothiraman

SESSION 8 - TUESDAY 27TH JUNE – SKEM 301

Session 8a: 09:20 – 10:35 – Excavations and retaining structures

Chair: Christos Vrettos

409 - A ground movement assessment case study: Validating the construction sequence to protect listed buildings during the construction phase of the Olympia development
Freya Summersgill, Simon Gerlach, Yeniree Chin-Fong

265 - Assessment of the verification concepts in the next generation of Eurocode 7 for excavation retaining walls in sand using the FEM
Elisabeth Seibel, Christos Vrettos, Achim Hettler

188 - 2D&3D numerical analyses of a deep excavation supported by LC columns
Sinem Bozkurt, Ayman Abed, Minna Karstunen

5 - The potential of 3D numerical modelling for the interpretation of load tests on a sheet pile quay wall
Pierluigi Alesiani, Paolo Ruggeri, Viviene Marianne Esther Frizzetti, Giuseppe Scarpelli

327 - Numerical analysis of the behavior of the sand sandwiched by two sheet piles
Hideharu Sugimoto, Bastien Chevalier, Pierre Breul, Toshifumi Mukunoki, Jun Otani

Session 8b: 11:00 – 12:30 – Constitutive modelling

Chair: Harvey Burd

18 - Numerical study of moist tamping and end platens lubrication effect on undrained triaxial test of a sand
Mauro Sottile, Nicolas Labanda, Roberto Cier, David Reid, Andy Fourie

360 - An enhanced critical state sand-structure interface model considering relative density
Saeed Golzar, Nasrin Vafaei, Kazem Fakharian

319 - A new constitutive model for cemented unsaturated soils: model performance and stability analysis
Giada Maria Rotisciani, Augusto Desideri, Angelo Amorosi

194 - Constitutive modelling of rate-dependent shearing in combination with creep of frozen granular soils
Ulrich Schindler, Stylianos Chrisopoulos, Roberto Cudmani

145 - Fuzzy-based parameter uncertainty in an elastoplastic model for clay
Djamalddine Boumezerane

356 – The construction process with the material point method
Luis Aviles, Nuria Pinyol

Session 8c: 14:00 – 15:30 – Shallow & deep foundations
Chair: Francesca Ceccato

220 – Effect of the failure mode on the macro-response of pile groups
Davide Noè Gorini, Luigi Callisto

230 – Numerical analysis of the axially loaded piles in sand by considering soil-pile interaction
Miad Saberi, Byron W. Byrne, Harvey J. Burd

333 – Integration of numerical methods in the second generation of Eurocode EN 1997
Colin Smith, Herbert Walter

116 – Back analysis of long-term measurements of a high-rise building founded on a raft foundation in overconsolidated clay
Aljoscha Ganal, Oliver Reul

86 – Combined pile-raft and raft foundation modelling and design for three distinct office buildings in Lisbon, Portugal
André Sousa, Nuno Silva, Alexandre Pinto

Scott Sloan Memorial Session: 16:00 – 18:00 – CAGB 200
Chair: Helmut Schweiger

Introduction and commemorative reflection: 16:00 – 16:20
Helmut Schweiger, David Potts

1st TC103 Scott Sloan Honour Lecture: 16:20 - 17:00
Using nonlocal strains to achieve objectivity in finite element analyses
David Potts

Special papers: 17:00 – 17:45

51 - Recent developments of the Particle Finite Element Method (PFEM) in Geomechanics
Antonio Gens, Lluís Monforte, Marcos Arroyo, Josep Maria Carbonell

157 - Constitutive modelling of crushable sands
C Tong, Daichao Sheng

429 - Granular media modeled by flexible polyhedra using the virtual element method
Peter Wriggers, Alfredo Gay Neto, Blaz Hudobivnik, Tiago Fernandes Moherdaui

Presentation by Elsevier of Scott Sloan Best Paper Awards: 17:45 – 18:00

18:00 - END OF CONFERENCE SESSIONS – TUESDAY 27TH JUNE

19:00 – boarding coaches to transfer to Thames dock for dinner
20:00 – 23:30 – Conference dinner: boat cruise on the Thames

WEDNESDAY 28TH JUNE

Keynote Lecture 3: 08:30 – 09:10 – SKEM 164

Chair: Angelo Amorosi

435 – Soil behaviour under cyclic loading – experiments, constitutive modelling and numerical applications
Torsten Wichtmann

SESSION 9 - WEDNESDAY 28TH JUNE – SKEM 164

Session 9a: 9:20 – 10:35 – Coupled analysis

Chair: Jelke Dijkstra

200 – Effects of fines content in numerical simulation of CPTu in silty sands
Sparsha Sinduri Nagula, Hans Petter Jostad, Øyvind Blaker

359 – A two-dimensional effective stress framework for modelling ‘whole-life’ soil strength changes
Conleth O’Loughlin, Yufei Wang, Z. Zhou, Christophe Gaudin

379 – An extended theory of porous media for expansive soils
Antonia Nitsch, Jan Machacek, Torsten Wichtmann, Carlos Grandas, Carlos Grandas Tavera

75 – Moving least squares material point method for porous media
Alexander Chmelnizkij

144 – Modelling rockfall by a novel FEM-DEM coupling approach with explicitly considering geomaterial heterogeneity
Bin Gong, Tao Zhao

Session 9b: 11:00 – 12:30 - Geo-energy & energy geotechnics

Chair: Jan Machacek

380 – Thermomechanical behaviour of silty sandy clays: An experimental and numerical investigation
Hamed Hoseini mighani, Saeed Tourchi, Janos Szendefy

149 – Finite element analyses of an inhomogeneous bentonite barrier for geological radioactive waste disposal applications
Giuseppe Pedone, Lidija Zdravkovic, David M Potts, Katerina Tsiamposi

224 – Thermal performance of thermo-active pile groups
Ryan Y. W. Liu, David M. G. Taborda

207 – Simulating the thermal performance of borehole heat exchangers under groundwater flow
Ze Zhou Wang, Xian-Wen Huang, Kai-Qi Li

104 – A simplified approach to numerical modelling of an underground pumped hydroelectric energy storage system
Ghaem Zamani, Andrea Franzia, Kenny Sørensen, Lars Vabbersgaard Andersen, Saeed Tourchi, Hans Henning Stutz

113 – Investigations on a novel gravitational energy storage system using a high-cycle accumulation model
Luis Mugele, Andrzej Niemanis, Andreas Lamparter, Hans Henning Stutz

Theme Lecture 7: 13:30 – 14:00

Chair: Jean-Michel Pereira

437 - On the application of constitutive models with an emphasis on offshore engineering problems
Angeliki Grammatikopoulou

Session 9c: 14:00 – 15:30 – Offshore geotechnics

Chair: Jean-Michel Pereira

344 - 3D FE simulation of an instrumented monopile under quasi-static loading
Anis Kheffache, Bruno Stuyts, Carlos Sastre Jurado, Wout Weijtjens, Christof Devriendt

52 - Installation effects in the Response of Laterally Loaded Monopiles in Sand- A Numerical-Based Analysis
Michail Spyridis, Suzana Lopez-Querol

126 - Resonance in offshore wind turbine systems due to seismic loading and extensive soil liquefaction
Julia Katharina Moller, Stavroula Kontoe, David Taborda, David M Potts

323 - Influence of a jack-up installation near a wind turbine foundation: a numerical study
Carlos Molina Mesa, Tim Pucker, Julian Bubel

10 - Numerical modelling of uplifting a surface foundation on clay
Sen Mei, Yinghui Tian, Mark Cassidy

217 - DEM analysis of helix number effects on offshore screw pile installation and in-service performance
Wei Wang, Mike Brown, Matteo Ciantia, Yaseen Sharif, Benjamin Cerfontaine

Session 9d: 16:00 – 17:30 – Offshore geotechnics

Chair: Matteo Ciantia

79 - Role of hydraulic conductivity on the mechanism of earthquake induced submarine landslides – a CFD-MPM analysis
Quoc Anh Tran, Erik Sørlie, Gustav Grimstad, Gudmund Reidar Eiksund

74 - Cone Penetration Tests (CPTs) in layered soils: a Material Point approach
Robert Bird, W.M. Coombs, C.E. Augarde, M.J. Brown, Y. Sharif, G Carter, K. Johnson, C. Macdonald

357 - Performance of shared suction caisson anchors for floating offshore wind turbines subject to seismic loading with varying orientation
James Barron, Mohamed Rouainia, Tom Charlton, Fraser Gibson, Howard Curtis

330 - Three-dimensional finite element modelling to assess the damage due to boulder impact during pile installation
Francesca Palmieri, David McLennan, Francisco Ciruela-ochoa, Andrew Cunningham, James Go, Paul Morrison, Cesar Tejada, Yiorgos Perikleous, Jacob Brandt, Mikkel Lubek

431 - Comparative study of hybrid monopile foundation for offshore wind turbines
Muhammad Aleem, Sachin Jindal, Ulvi Rahmanli, Subhamoy Bhattacharya, Maryam Massah Fard

186 - Evaluation of DeltaSand in numerical modelling of monotonic and cyclic element tests using experimental data of Toyoura sand
Majid Fetrati, Vahid Galavi, Majid Goodarzi, Asad Ayub, Sakineh Fazlighiyasabadi, Stefan Kreiter, Tobias Mörz

SESSION 10 - WEDNESDAY 28TH JUNE – SKEM 201

Session 10a: 09:20 – 10:35 – Probabilistic & inverse analysis

Chair: Hans Henning Stutz

[69](#) - A hybrid reliability methodology for rock tunnel stability analysis coupled with polymorphic uncertainty modelling of rock properties

Surabhi Maurya, Gaurav Tiwari

[253](#) - Large deformation modeling of landslides using stochastic MPM with interdependent variables

Guotao Ma, Mohammad Rezania, Mohaddeseh Mousavi Nezhad

[222](#) - Reliability analysis of jet grouting bottom plugs

Jose Antonio Alonso-Pollan, L. M. Muñoz, R. Jimenez

[263](#) - Correlation analysis of the hypoplastic clay parameters based on ExCalibre dataset database

Phuong Chin Do, Tomáš Kadlíček, David Mašín, Jan Najser

[73](#) - Assessment of boulder content by stochastic modelling and inverse analysis

Maedeh Alinejad, Anders Beijer Lundberg

Session 10b: 11:00 – 12:30 – Probabilistic & inverse analysis

Chair: Majid Nazeem

[211](#) - Probabilistic analysis of critical safety margin of horizontally loaded shallow foundations

Anteneh Biru Tsegaye, Hilde Aas Nøst, V. Gjelsvik

[325](#) - The influence of parameter variability on subsidence

Pierre Wikby, Ayman Abed, Mats Karlsson, Jonas Sundell, Minna Karstunen

[106](#) - On the feasibility of data assimilation for uncertainty modelling in geotechnics

Amardeep Amavasai, Tara Wood, Jelke Dijkstra

[201](#) - Response surface based probabilistic studies on static liquefaction failure of tailings dams

Sparsha Sinduri Nagula, Haoyuan Liu, Farrokh Nadim, Hans Petter Jostad, Luca Piciullo

[414](#) - Prediction of hydraulic conductivity characteristics of slurries using inverse analysis

Akhila Vasudev, Tadikonda Venkata Bharat

[275](#) - Effects of spatial variability on Bayesian model updating using measured excavation responses

Wang Ze Zhou, Yue Hu, Xiangfeng Guo

Theme Lecture 8: 13:30 – 14:00

Chair: Katerina Tsiamposi

[444](#) - The soil-atmosphere interface: an important boundary condition or an unnecessary complicating factor

Phil Vardon

Session 10c: 14:00 – 15:30 – Dams, embankments and slopes

Chair: Katerina Tsiamposi

[269](#) - FEniCS simulation of a partially saturated slope under varying environmental loads

Ayman Abed, Eleni Gerolymatou, Minna Karstunen

355 - Numerical modelling of the geological processes responsible for mid-Pleistocene landslide inception: an insight into possible factors for the current landslide activity
Vito Tagarelli, Francesca Santaloia, Gaetano Elia, Federica Cotecchia

227 - Is the maximum shear stress, in an assumed constant shear drained stress path, really constant?
David Reid, Riccardo Fanni, Andy Fourie

20 - Undrained effective stress safety analysis
Gustav Grimstad, Ivar Jevne Arnesen, Brede Bull, Davood Dadras-Ajirlou

432 - Effect of initial stiffness on the induced horizontal displacements of geotechnical structures built on/in overconsolidated clays
Luis Santos, Paulo da Venda Oliveira, Jorge Almeida e Sousa, Luís Leal Lemos

115 - Temperature-dependent residual shear strength of bentonite: experimental investigation and numerical modelling
Saeed Tourchi, Marco Loche, Gianvito Scaringi

Session 10d: 16:00 – 17:30 – Excavations and retaining structures

Chair: Franz Tschuchnigg

24 - Numerical evaluation on the performance of deep excavation with the strut-free retaining system in clays
Ari Surya Abdi, Chang-Yu Ou

105 - Ultimate limit state design of deep excavation problems according to EC7 using numerical methods
Hans-Peter Daxer, Helmut F. Schweiger, Franz Tschuchnigg

400 - A numerical study on the behaviour of contiguous pile wall supporting footing adjacent to excavation
Aradhana Mishra, V. A. Sawant

25 - Modelling of soldier pile walls in Plaxis 2D
Frederik Andersen, M.R. Lodahl

318 - Peanut launch chamber
Belen Martinez-Bacas, Marta Perez

59 - Egg-shaped large cantilever excavation pit using Plaxis 3D
Pascal Schäuber, Javvadi Sarath Chandra Prasad

SESSION 11 - WEDNESDAY 28TH JUNE – SKEM 307

Session 11a: 09:20 – 10:35 – FEM-FDM-DEM-MPM

Chair: Hoe Chian Yeow

213 - Numerical investigation of vibration screening using single and dual open trenches in layered soil media
Nitish Jauhari, Amarnath Hegde, Pradipta Chakrabortty

362 - Numerical assessment of enhanced urban-train support systems
Juan Manuel Mayoral Villa, Nohemi Olivera, Simon Tepalcapa, A. Roman, Mauricio Alcaraz

423 - Evaluating the interaction of different parameters of the barrier on each other by Response Surface Methodology
Mehran Naghizadeh, Martin Ziegler, Raul Fuentes

428 - Numerical investigation of the impact of driving imperfection on the water pressure resistance of HZ-M walls

Rui Matos, Cecile Prum, A El Kasimi Oliver Hechler

288 - Numerical modelling of liquefaction around marine structures in the OpenFOAM framework

Christian Windt, Ranjithkumar Shanmugasundaram, Stefan Schimmels, Matthias Kudella, et al.

Session 11b: 11:00 – 12:30 – FEM-FDM-DEM-MPM

Chair: Ronald Brinkgreve

107 - Numerical investigation of backward erosion piping

Hannah Kaiser, Jürgen Grabe

81 - Simulating dry granular flow impact on 3D rigid obstacles

Maria Kontoe, Suzana Lopez-Querol, Tiziana Rossetto

304 - Modelling of unstable fingered flow in unsaturated soil with Gaussian random fields

Evan Ricketts, Peter Cleall, Tony Jefferson, Pierre Kerfriden, Paul Lyons

305 - A methodology for modelling the flow regime in unsaturated infinite slopes

Diana Bianchi, Domenico Gallipoli, Martino Leoni, Rossella Bovolenta

246 - Peridynamic modelling of coupled THM behaviour of unsaturated frozen soils

Petr Nikolaev, Majid Sedighi, Andrey Jivkov, Lee Margetts

346 – Stability analysis of TSFs using a simplified quasi-1D deformation model

Kevin Bernardo, Felipe Lopez Rivarola, Alejo Oscar Sfriso

Theme Lecture 9: 13:30 – 14:00

Chair: Marti Lloret-Cabot

439 - Finite element limit analysis in geotechnical engineering – theory and application

Chris Martin

Session 11c: 14:00 – 15:30 – FEM-FDM-DEM-MPM

Chair: Marti Lloret-Cabot

22 - Challenges of the Particle Finite Element Method (PFEM) for modelling geotechnical problems

Xue Zhang, Yujia Zhang

233 - Development of a stochastic finite-element package for use with Plaxis 2D

Ze Zhou Wang, Min-Xuan Deng, Siang Huat Goh

96 - Mesoscale FEM approach on cemented sand: challenges and implementation of high order elements

Michail Komodromos, Mahan Gorji, Alexander Düster, Jürgen Grabe

249 - N-PFEM modelling of plate anchor movement in sand

Yujia Zhang, Xue Zhang

279 - tiSPHi: A parallelised GPU-accelerated SPH framework for modelling robot-ground interaction

Zhibin Lei, Raul Fuentes

367 - Application of stress functions in numerical limit analysis

Colin Smith, Matthew Gilbert

Session 11d: 16:00 – 17:30 – FEM-FDM-DEM-MPM

Chair: Wenjie Cui

83- Numerical studies on the use of zero thickness interfaces in cyclic soil structure interaction analysis
Alexander Stastny, Franz Tschuchnigg

148 - A sensitivity study on the mechanical properties of interface elements adopted in finite element analyses to simulate the interaction between soil and laterally loaded piles
Giuseppe Pedone, Stavroula Kontoe, Lidija Zdravkovic, Richard Jardine, David M Potts

209 - Phase field modelling of hydraulic fracture
Y Navidtehrani, C Betegón, Emilio Martinez-Paneda

168 - One-point integrated hourglass-enhanced u-U elements with mortar fluid-phase contact and Sanisand interface
Jan Machacek, Patrick Staubach

352 - Finite element implementation of the Christensen failure criterion with zero tensile strength
Johan Clausen

396 - A numerical investigation for computing effective elastic stiffness of bonded geomaterials
Swati Srivastav, Amar Nath Roy Chowdhury, Arghya Das, Vipul Patel

SESSION 12 - WEDNESDAY 28TH JUNE – SKEM 207

Session 12a: 09:20 – 10:35 – Geotechnical earthquake engineering

Chair: Stefania Sica

54 - Numerical modelling of a shallow tunnel buried adjacent to a surface structure in liquefiable ground
J. Zhang, Emilio Bilotta

117 - Preliminary assessment of the correlation between three-dimensional topography and lining forces induced by earthquakes on shallow tunnels
Gaetano Falcone, Gaetano Elia, Francesco Cafaro, Annamaria di Lernia

23 - 3D Numerical Investigation into the seismic behaviour of tunnels in natural soils
Lowell Tan Cabangon, Gaetano Elia, Mohamed Rouainia, Suraparb Keawsawasvong

361 - Regional subsidence effects in tunnel-soil-structure seismic interaction
Juan Manuel Mayoral Villa, Mauricio Díaz, Mauricio Alcaraz

410 - Seismic response of a buried pipeline in sandy soil layer: numerical approach
Smrutirekha Sahoo, Badavath Naveen

Session 12b: 11:00 – 12:30 – Geotechnical earthquake engineering

Chair: Emilio Bilotta

384 - Seismic liquefaction potential assessment by means of automated numerical modelling
Nicolas Tasso, Mauro Sottile, Alejo Sfriso

134 - Non-linear critical speed analysis of high-speed railways
Alexandre Castanheira-Pinto, Jesús Fernández-Ruiz, Pedro Alves Costa, David Connolly

[418](#) - Performance of soil-structure systems at collapse level: ASCE 7-10 to ASCE 7-22 criteria

Ali Gharavi

[406](#) – On the impact of soil permeability in the numerical simulation of seismically induced liquefaction

Shengjie Ma, Stavroula Kontoe, David M. G. Taborda

[426](#) - Modal analysis of 3D soil models for solving coupled soil-structure interaction problems

Antonella Ambrosino, Stefania Sica

[401](#) - Numerical study on a pile subjected to seismic loading in crushable soil

Mohd Saqib, Arghya Das, Nihar Patra

Session 12c: 14:00 – 15:30 – Dams, embankments and slopes

Chair: Mohamed Rouainia

[354](#) - Numerical modelling of tides in an embankment lifecycle analysis

Benjamin Wei Li Guo, Lidija Zdravkovic, Aikaterini Tsiamposi, Christian Onof, David M Potts

[425](#) - Effect of drawdown velocity on the stability of a small earth dam

Tretola Mariagrazia, Sica Stefania

[128](#) - Shear strength reduction analysis and its usage in slope stability with unconfined seepage

Stanislav Sysala, Franz Tschuchnigg, Eva Hrubešová, Zdeněk Michalec

[221](#) - Seismic stability analysis of rock slopes using pseudodynamic approach

R Ganesh, Jagdish Prasad Sahoo

[257](#) - Numerical study on the behaviour of earthen embankment built on liquefiable soil

Abhijit Chakraborty, V. A. Sawant

[137](#) - Numerical study to predict the settlement of the embankment built on Indian marine clay reinforced with DM columns

Sujata Fulambarkar, B. Manna, J.T. Shahu

17:30 - END OF CONFERENCE SESSIONS – WEDNESDAY 28TH JUNE

17:30 – 18:00– CLOSING ADDRESS – SKEM 164

ADDITIONAL REGISTERED BUT NOT PRESENTED PAPERS

Theme: Constitutive modelling

[38](#) - Numerical modeling of the swelling of clayey geomaterials: A comparative study between Barcelona Basic model (BBM) and a multiscale approach
Hamza Mhamdi Alaoui, Richard Giot, Dimitri Prêt, Sylvie Granet, Geoffroy Melot

[39](#) - Towards the development of a new isotach elastoplastic constitutive model for soft soils
Weidong Wang, Alexander Lester, George Kouretzis, Jubert Pineda, John Carter

[123](#) - Nonlocal regularization of an anisotropic critical state model for sand
Zhiwei Gao, Xin Li, Dechun Lu

Theme: FEM-FDM-DEM-MPM

[366](#) - Flow modelling through a packing of real particles
Felipe Góis, Márcio Farias, Carlos Morfa, Joaquim Neto

Theme: Geotechnical earthquake engineering

[152](#) - Numerical quantification of the dependency of the seismic site response on the DMT-based cyclic strength of sands
Anna Chiaradonna, Giuseppe Tropeano, Paola Monaco

Theme: Probabilistic & inverse analysis

[234](#) - Imprecise moment-independent global sensitivity analysis of rock slope using Bayesian multi-model inference
Akshay Kumar, Gaurav Tiwari

Theme: Machine learning & artificial intelligence

[92](#) - The prediction of soil cracking caused by desiccation using artificial intelligence and statistical analysis
Abolfazl Baghbani, Mohammadjavad Yaghoubi, Firas Daghistani, Susanga Costa, Thomas Baumgartl

[94](#) - Improving soil liquefaction potential evaluation through AI-based prediction of SPT values: a comparative study
Abolfazl Baghbani, Firas Daghistani, Mohamad Mahdi Shalchiyan, Susanga Costa, Hasan Baghbani, Roohollah Shirani Faradonbeh, Jafar Bolouri Bazaz

Theme: Dams, embankments & slopes

[277](#) - Parametric finite element analysis of an unsaturated tailings dry stack
Johanna Barbaran, Lidija Zdravkovic, David Potts, Joseph Quinn

[383](#) - Seismic behaviour of a tailings dam in Peru
Celso Salvador, Freddy Robles, Celso Romanel

[430](#) - Analysis of consolidation settlements in a bauxite waste disposal system considering different constitutive models
Miryan Yumi Sakamoto, Celso Romanel, Jackeline Castaneda Huertas

Theme: Shallow & deep foundations

[9](#) - Finite element modelling of earth pressure on integral bridge piles
Marco D'Ignazio, Ville Lehtonen, Lauri P. Savolainen, Panu Tolla, Veli-Matti Uotinen

Theme: Offshore geotechnics

[173](#) - Derivation of equivalent number of cycles in the design of cyclically loaded offshore foundations
Jann-Eike Saathoff, Martin Achmus

Theme: Geo-energy & energy geotechnics

[241](#) - Finite element analysis of thermos-active piled rafts
Georgios Georgiadis, Lidija Zdravkovic, David M. Potts

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Conference Themes

1. Constitutive modelling for saturated and unsaturated soils
2. Finite element, finite difference, discrete element, material point and other methods
3. Coupled analysis
4. Geotechnical earthquake engineering
5. Probabilistic and inverse analysis
6. Machine learning and artificial intelligence
7. Dams, embankments and slopes
8. Excavations and retaining structures
9. Shallow and deep foundations
10. Tunnelling and mining applications
11. Reinforcement and ground improvement
12. Offshore geotechnics
13. Geo-energy and energy geotechnics
14. Regulations and codes of practice

