

NUMGE 2023

10th European Conference on Numerical Methods in Geotechnical Engineering

26 – 28 June

Imperial College London, London, UK

Detailed Programme

Our Sponsors

Platinum

Gold

Silver



Geotechnical
Consulting
Group



Oasys



Instructions for paper presentations

- the conference audio-visual system runs Windows 10 and the latest version of Office 365
- the supported presentation formats are Power Point and Adobe Acrobat PDF
- presentations must be loaded on the conference system (no personal laptops are allowed)

Instructions for presentation times

The conference programme is full and allocated presentation times will be strictly enforced for the smooth running of sessions:

- Keynote lectures – 40 min; no Q&A session
- Theme lectures – 20 min; 5 min Q&A session; 5 min room change (30 min total)
- General papers – 10 min; 2-3 min Q&A session; 2 min changeover of speakers (15 min total)

Instructions for presentation submission

We request that each presenter uploads their presentation as early as possible, in advance of their presentation slot, on the conference computer system. Please name your presentation files according to the following convention:

ID-Session-Surname

for example, *590-2a-Smith*

Presentation uploading can be done in two ways:

- The easiest way is to use this link:

<https://tinyurl.com/numge2023>

If you encounter any technical issues this is probably caused by browser settings, in which case you can simply use the direct link:

<https://imperialcollegelondon.app.box.com/f/1ec985c5a4944ca99cb735719dd1cb3a>

- You can also upload your presentation in the Speaker Ready Room, located in SKEM 163 on Level 1 of the Skempton Building. Please bring a copy of your presentation (and of all movie files if you use a movie in your presentation) on a USB key.

Please note that it will not be possible to upload presentations in the actual lecture rooms.

On the day

On the day of your presentation, please arrive to the room allocated to your session sufficiently early and make yourself known to the session Chair. This is very important for the proceedings to run smoothly.

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 Dadrasajirlou, 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 Iranj, 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, Andrés 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, Lluís 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 Ziotopoulou, 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 Tsiampousi, 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 Hoerrle

[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 – FM-FD-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 Saesma](#), [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 Rezaia

[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 Ilhan](#), [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 Lämsivaara, 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, Ana Ivanovic, Nick Cresswell, Marco Previtali

[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 – FM-FD-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 Stefopoulos, 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 – FM-FD-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, Stefano Muraro, Cristina Jommi

[16](#) - Numerical modelling of direct simple shear tests with 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 KO on the settlement of a raft foundation: a numerical study

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

[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 Ángel Mánica Malcom](#), [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

[Zeolla Enza](#), [Sica Stefania](#)

[324](#) - Numerical simulation of soil-structure interaction experiments on shallow founded structures for different mass configurations

[Marios Koronides](#), [Stavroula Kontoe](#), [Lidija Zdravkovic](#), [Athanasios Vratisikidis](#), [Dimitris Pitilakis](#), [David M Potts](#), [Anastasios Anastasiadis](#)

[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](#), [Prof. Madabhushi Gopal S.P.](#)

[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 Asgarpour](#), [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](#) - Assessment of foundation stiffness and thickness in 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 Sen Gupta, Jayanta Chattopadhyay

SESSION 6 - TUESDAY 27TH JUNE – SKEM 201

Session 6a: 09:20 – 10:35 – FM-FD-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 – FM-FD-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 Colom, 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 Urmj, 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 – FM-FD-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 Moormann

[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 Pardoën, 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 Tantivanaphaisal, 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 Tsiampousi

[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 Jajma, 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, Vivienne Marianne Esther Fruzzetti, Giuseppe Scarpelli

[327](#) - Numerical analysis of the behavior of the sand sandwiched by two sheet piles using Discrete Element Method
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](#) - 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 Saberj, 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](#) - Automatic stress integration and time stepping
Daichao Sheng

[429](#) - Granular media modeled by flexible polyhedra using the virtual element method
Peter Wriggers, Alfredo Gay Neto, Blaz Hudobivnik, Tiago Fernandes Moherdau

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 Chmelnickij

[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 Hoseinimighani, 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 Tsiampousi

[224](#) – Thermal performance of thermo-active pile groups
Ryan Y. W. Liu, David M. G. Tabor

[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 Franza, 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 Niemunis, 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 Mej, 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, Y.U. Sharif, B. 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 Sørli, 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, M. Rouainia, T.S. Charlton, F. Gibson, H. Curtis

[330](#) - Three-dimensional finite element modelling to assess the damage due to boulder impact during pile installation
Francesca Palmieri, D. McLennan, F. Ciruela-Ochoa, A. Cunningham, J. Go, P. Morrison, C. Tejada, G. Perikleous, J. Brandt, M. Lubek

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

[186](#) - Evaluation of DeltaSand in numerical modelling of monotonic and cyclic element tests using experimental data of Toyoura sand
Majid Fetрати, 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 Mašin](#), [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 Naqula](#), [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 Tsiampousi

[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 Tsiampousi

[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, Federica Cotecchia, Gaetano Elia, Francesca Santaloia

[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 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
P. Schauber, J. Sarath Chandra Prasad

SESSION 11 - WEDNESDAY 28TH JUNE – SKEM 307

Session 11a: 09:20 – 10:35 – FM-FD-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 Chakraborty

[362](#) - Numerical assessment of enhanced urban-train support systems
Juan Manuel Mayoral Villa, Nohemi Olivera, Simon Tepalcapa, A. Roman, M. 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

Matos Rui, Cecile Prum, A El Kasimi Oliver Hechler

[288](#) - Numerical modelling of liquefaction around marine structures in the OpenFOAM framework

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

Session 11b: 11:00 – 12:30 – FM-FD-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 – FM-FD-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 – FM-FD-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: Sica Stafania

[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, Juan Manuel Mayoral Villa

[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](#) - Calibration of a 3D numerical model to perform modal analysis of coupled systems of soil and structure

Ambrosino Antonella, Sica Stefania

[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 Tsiampousi, 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 Hruběšová, Zdeněk Michalec

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

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