

Stefano Utili Laurea(MEng) MSc PhD CEng FICE Eur Ing

Professor of Geotechnical Engineering and Head of the Geotechnics and Structures Group, Newcastle University, School of Engineering, Newcastle upon Tyne, UK

Adviser to the Select Committee of Science & Technology, House of Commons, UK Parliament

DoB: [REDACTED]

ACADEMIC QUALIFICATIONS

PhD Doctorate in Geotechnical Engineering, Politecnico di Milano (Italy), 2004
MSc MSc in Structural Engineering, Chalmers University (Göteborg, Sweden), 2001
Laurea equivalent to MEng in Civil Engineering (5 years degree), cum laude (highest grade), Politecnico di Milano (Milan University of Technology, Italy), 2000

PROFESSIONAL QUALIFICATIONS

Eur Ing European Engineer, 2008
CEng Chartered Engineer, 2007

APPOINTMENTS

Sept/16 – present Full Professor, School of Engineering, Newcastle University
March/18 – present Parliamentary Academic Fellow at POST advising the Select Committee of Science & Technology, House of Commons (<https://www.parliament.uk/mps-lords-and-offices/offices/bicameral/post/fellowships/parliamentary-academic-fellowship-scheme/successful-fellows/>)
Mar/16 – Aug/16 Full Professor, School of Engineering, University of Warwick
Oct/11- Feb/16 Associate Professor, School of Engineering, University of Warwick
Jan/12- present visiting Chair Professor at University of Tongji (Shanghai, China), Innovation Centre for Disaster Prevention, Department of Civil Engineering
Oct/08- Sep/11 Departmental Lecturer, Department of Engineering Science, University of Oxford
Lecturer at St Anne's College, Oxford
Nov/06–Oct/08 Post-doctoral Research Fellow (grade 7), Department of Civil Engineering, University of Strathclyde, Glasgow.
May/05–Oct/06 Senior Engineer at SnamReteGas Spa (ENI Group), San Donato Milanese (Italy)
Apr/04-Apr/05 Structural designer at GL Locatelli, Turate (Italy)

PROFESSIONAL MEMBERSHIPS

- Fellow of the Institution of Civil Engineers (FICE, 64089840)
- Fellow of the Geological Society of London (FGS, election date 27 November 2013)

LEADERSHIP & MANAGEMENT EXPERIENCE

- Adviser to the Science and Technology Committee of the House of Commons and Principal Investigator for the project 'Does the UK need EU funding to remain a world-leader in scientific research and innovation? An analysis of the impact of EU vs UK funding on UK Research and Development.' The project (running from March 2018) involves the management of a large group of researchers from Science Metrix, Canadian world leading company in bibliometric and research evaluation analysis, and liaising with a variety of Parliamentary and governmental entities, such as the Select Committee on Science & Technology House of Commons and the equivalent Committee of the House of Lords, the research evaluation team of the Department for Business, Energy and Industrial Strategy (BEIS) which include the evaluation team of UKRI and Universities UK. The report with the main project findings will be published by the Select Committee of Sc & Tech HoC in September and feed key quantitative data into the current Brexit negotiations around the participation of the UK as an associate Member state in Framework Programme 9, the successor of H2020. A Parliamentary workshop to illustrate the project findings will be organised in Spring 2019.
- Head of the GEST (Geotechnics and Structures) Group, Line manager for 16 academics and 3 laboratory technicians, in charge of the oversight and strategic development of the Group research and teaching portfolios. The teaching portfolio includes 3 MSc degrees (60-80 students a year) and 2 UG degrees in Civil

Engineering which include the option of a year in industry (130-150 students a year intake). The research portfolio includes the management of 20 PhD students and Post-docs, a large structural laboratory space containing heavy machineries and chemicals.

- At SnamReteGas (<http://www.snamretegas.it>), ENI group (6th oil company in the world), senior engineer responsible for the team of geologists, in charge of the technical management and the safety of the Italian network of onshore gas buried pipelines which involves an annual budget of around 5 million €.
- Performing Personal Development Review and responsible for the workload assignment (teaching, administrative and research duties) to the academics of my Group.
- Responsible for the induction for new recruits and mentor of 5 early stage career academics.
- Managing coordinator of the international exchange of >75 researchers from universities and private firms of 14 countries (<http://www.geohazard.ac.uk/>) for grant H2020 MSCA RISE 'Geo-ramp' (2015 – 2019) and >50 researchers for grant FP7 IRSES 'geohazards and geomechanics' (2012-16).
- Member of the University Strategy Committee tasked with the selection of impact case studies for REF2021.
- Nominated for the Faculty Promotion Committee 2018/19.
- Organiser of the research seminars for the Civil group at University of Warwick (2013-16) and at University of Oxford (2010-11).
- In charge of the design office at GL Locatelli (2004-05) and of a small team of geologists at SnamReteGas Spa (2005-06).

TEACHING EXPERIENCE & LEADERSHIP

- Newcastle University: academic year 2016/17 & 17/18 module leader for "Geotechnical design" (40 hours of lectures and tutorials) to 3rd year UG in Civil Engineering (80 students) and "Geotechnical design" (70 hours of lectures and tutorials imparted in 2 week block modules) for MSc students in "Geotechnical Engineering" and "Engineering Geology". Lecturer on the "Engineering Ethics and Sustainability" module to 3rd year UG. Supervisor of final year individual MEng and MSc projects.
- Representative of the Civil Stream in the "Teaching Review Committee" (2012-13) tasked with drafting the new degree curriculum for the 1st and 2nd year Undergraduate BEng/MEng degrees of the School of Engineering (University of Warwick).
- University of Warwick: academic years 2011/12 & 12/13 & 13/14 & 14/15 & 15/16. Module leader for "Advanced geotechnical engineering" (4th year MEng), "Geotechnical Engineering part 2" (3rd year undergraduates); "Geological investigation and ground characterisation" (MSc in Tunnelling and Underground Space). Supervisor for 4th year MEng design group project (7 students per group) and for final year MEng projects.
- University of Oxford: academic years 2008/09 & 09/10 & 10/11. Tutor at St. Anne's College for paper P3 (Structures and mechanics) 1st year students (6 students); paper A4 (Structures and material science) 2nd year students (6 students); paper A4 (Structures and mechanics) 3rd year students (6 students). Tutorials are typically 25 hours per term. Lecturer in the Department of Engineering Science for the module "Seepage and consolidation". In charge of the coursework module "Surveying" (30hrs) and of the Laboratory course in "Soil mechanics" (30 hours).
- In charge of open days and admissions at St Anne's College (2009 & 2010).

MEMBERSHIP OF INTERNATIONAL TECHNICAL COMMITTEES

- UK representative on the CEN committee TC 250/SC 7/WG3/TG 1 tasked with the revision of Eurocode 7 (European wide code of practice for Geotechnical Engineering mandated in the UK) for the section 'Slopes and embankments';
- member of Technical Committee 208 "Slope stability in engineering practice" of the International Society for Soil Mechanics and Geotechnical Engineering (ISSMGE);
- member of Technical Committee 105 "Geomechanics from Micro to Macro" of ISSMGE.

GRANTS

Full Member of the EPSRC College of Reviewers; expert evaluator for EU H2020; assessor for Hong Kong Research Council; assessor for grant award scheme of the National Center of Science & Technology Kazakhstan.

Bids in preparation and submitted:

- PI for 'Transportation embankments and cuttings: design of innovative solutions to tackle the 21st century challenges of climate change' EPSRC responsive mode in collaboration with University of Southampton and Sheffield (bid to be around £1.1 million), to be submitted in September 2018.

Current grants:

- June 2018 –September 2022: Co-I, Lead of Work Package ‘Discrete Element modelling’ for EPSRC Programme grant ‘Assessment, Costing and enHancement of long lIfe, Long Linear assEtS’, **£5 million**, PI Prof. Glendinning.
- March 2018 –February 2022: Co-I (Newcastle lead) H2020-MSCA-RISE-2017, “towards geoHazards rEsilient infRastruCtUre under changing cLimatES” EU H2020 RISE. Total sum of the project **€2.372 million, k€320** for Newcastle University.
- March 2018 - February 2019: PI **£60,000** EPSRC IAA secondment at the Select Committee on Science and Technology House of Commons for project 'Does the UK need EU funding to remain a world-leader in scientific research and innovation? An analysis of the impact of EU vs UK funding on UK Research and Development.'
- April 2015 - March 2019: Coordinator (Principal Investigator) for H2020 MSCA RISE, title “Geohazards – risk assessment mitigation prevention” <http://www.geohazard.ac.uk/>. Total sum of the grant **€2.2 million** of which **k€820** to the PI institution (of which the overhead is k€450).

Past grants:

- 2012 – 2016: Coordinator (Principal Investigator) for “Geohazards and geomechanics” EU FP7 IRSES. Total sum awarded: **k€439**.
- 2011 – 2015: PI for EPSRC conversion CASE award (total around **£80,000**). Principal Investigator, project title: “Mechanical characterisation of soil-pipe interaction for on-bottom pipelines subject to lateral buckling by DEM analyses”; BP contributed **£28,000**.
- 2010 – 2014 PI for EPSRC Industrial CASE award (industrial contribution £21,700, total award **£81,000**) at University of Oxford. Principal investigator, project title: “Shot peening optimisation using the DEM”. The industrial partner is DEM Solution Ltd whose industrial contribution was underwritten by Rolls-Royce.
- 2009 – 2010 Royal Society RG2009/R1, **£14,950** at University of Oxford. Principal investigator, project title: “Modelling geotechnical plane strain boundary value problems in sands by the Distinct Element Method (DEM)”.
- 2008 Valseriana Srl, consultancy for the ‘assessment of the progressive retreat of a natural cliff in Rosciano’ **€30,000** co-I (**k€10** to my Institution).
- 2007 – 2009 **£19,400** from the Scottish Government for the project: “Long term deterioration of flood embankments” at Strathclyde University. Principal Investigator (Dr. P. Sentenac coinvestigator).
- 2007 – 2009 **£14,700** from the Institution of Civil Engineers (ICE) R&D Enabling Fund (ref 0708) for the project: “Long term deterioration of flood embankments”. PI (Dr. P. Sentenac coinvestigator).

EDITORIAL BOARD MEMBERSHIPS

- *Rock Mechanics and Rock Engineering (Springer ed.)* (2016 – present)
- *Engineering Geology* (2016 – present)
- *Proceedings of the ICE – Geotechnical Engineering (Institution of Civil Engineers)* (2016)
- *Indian Geotechnical Journal (Springer ed.)* (2016)

Guest Editor of the following Special Issues:

- “Monitoring, physical and numerical modeling of landslides and debris flows” in *Engineering Geology* (2017), volume 219;
- “Landslides and Geophysical Investigations: Advantages and Limitations” in *International Journal of Geophysics* forthcoming (2018);
- “Mega Engineering Projects in Challenging Geological Environments – A Modern Perspective” in *Engineering Geology* forthcoming (2018).

CONFERENCE ORGANISATION / CHAIRING

- 2018 invited lecturer & Chair of special session on ‘Slope stability’ at the China – Europe Conference on Geotechnical Engineering, BOKU, Vienna (Austria), <https://china-euro-geo.com/program/>.
- 2018 co-organiser and lecturer of International PhD School on ‘Monitoring and numerical modeling of landslides and debris flows’ to be held at BOKU, Vienna (Austria) co-funded by EU RISE ‘Hercules’ & ‘Geo-ramp’.
- 2018 Co-convener at the European Geophysical Union (EGU), held in Vienna (Austria), of session NH3.15/GI3.20/SSS13.52 ‘Landslides in developing country: advantage and limits in constraining engineering-geological models by means of low-cost techniques’.

- 2016 Organiser of International PhD School on ‘Building DEM models for geohazards’ held at UPC (Barcelona, Spain) co-funded by EU RISE Geo-ramp.
- 2015 **Organiser of Int Symposium “Geohazards and Geomechanics”**, supported by TC105, TC208, TC302 held at University of Warwick, 10 - 11 September 2015, <http://www2.warwick.ac.uk/fac/sci/eng/research/civil/geo/conference/>.
- 2014 Co-convener at the European Geophysical Union (EGU), held in Vienna (Austria), of session NH3.13: “Numerical modeling for the analysis of failure processes in geomaterials and geostructures”.
- 2013 Co-convener at the European Geophysical Union (EGU), held in Vienna (Austria), of session NH3.13: “Numerical modeling for the analysis of failure processes in geomaterials and geostructures”.
- 2012 Member of the organising Committee for the *Int Symp on Discrete Element Modelling of Particulate Media*, Birmingham (UK). Proceedings published by RSC Publishing.

GRADUATE & UNDERGRADUATE SUPERVISION AND EXAMINATIONS

The following students have been awarded their PhD having being required “minor corrections” at their viva.

- Chiara Modenese; graduated in June 2013; thesis “Numerical Study of the Mechanical Properties of Lunar Soil by the Discrete Element Method”.
- Chia Wen Boon; graduated in October 2013; thesis “Distinct element modelling of jointed rock masses: algorithms and their verification”. He has been awarded the **Rocha Medal 2016** by the International Society of Rock Mechanics for the best PhD thesis in Rock Mechanics (worldwide selection).
- Zhao Tao; graduated in June 2014; thesis “Numerical modelling of debris flow”.
- Kovtham Murugaratnam; graduated in February 2015; thesis “Shot peening optimisation using the DEM”.
- Giulia Macaro; graduated in June 2015; thesis “Mechanical characterisation of soil-pipe interaction for on-bottom pipelines subject to lateral buckling by DEM analyses”.
- Weigao Wu (sole supervisor); graduated in May 2016; thesis “A semi-analytical approach utilising limit analysis for slope stability assessment and optimal design”.
- Chrysoula Voulgari; graduated in January 2017; thesis “Experimental and numerical modelling of the evolution of natural slopes subject to weathering and climatic variations”.
- Akram Abd graduated in August 2017; thesis “Geosynthetic-reinforced and unreinforced soil slopes subject to cracks and seismic action: stability assessment and engineered slopes”.
- Bowen Yang; vivaed in March 2018; thesis “Numerical methods for the calculation of tunnel induced settlements”.

Currently supervising

- Natalie Wride; thesis “Geotechnical modelling of embankments for high speed railways”.
- Nicko Kassotakis; thesis “Semi-automated Inspection and Assessment of Masonry Arch Bridges”.
- Vasileios Angelidakis; thesis “Discrete Element Method modelling of non-spherical particles: Application to railway ballast”.
- Ellen Robson; thesis “Modelling Shallow Landslide Triggering via Analytical Models and Analogue Experiments”.
- Andrea Agosti; thesis “Innovative design of open cast mines in weak rocks”.

Internal examiner for: Mr Oboho Eminue; Ms R.M. Hen-Jones; E. Fogarty Hover; A. Al Makky.

External examiner at:

- Cambridge University for Mr Xuzhen He, supervisor Dr Dongfang Liang
- UPC Barcelona for Ms Natalie Climent, supervisor Prof. Antonio Gens
- UPC Barcelona for Mr Tapias Camacho, supervisor Prof. Eduardo Alonso
- Delft University for Mr Kang Liu, supervisor Prof. Micheal Hicks and Dr Phil Verdon.

Supervisor for more than 30 MEng/MSc theses.

PUBLICATIONS

According to Scopus, 15 papers of mine are within the top 10% cited papers in their field (see Scopus ‘citation benchmarking’ function). My current h factor in Scopus is 18.

PAPERS IN PEER REVIEWED INTERNATIONAL JOURNALS (ISI)

The asterisk indicates a PhD student of mine. In red font a brief statement of impact is given for those 5 papers I currently intend to submit to REF2021.

1. Utili S., Campbell D. (2019). EU vs national UK research funds: a systematic cost effectiveness analysis. *Nature*, under review.
2. Martin E., Thornton C., Utili S., (2019) Micromechanical investigation of the liquefaction of a gravel by cyclic 3D DEM tests. *Geotechnique*, under review.
3. Macaro G.*, Utili S., Martin CS (2019). DEM simulations of transverse pipe-soil interaction on sand. *Geotechnique*, under review.
4. Utili S. (2018). Discussion on ‘New perspective on seismic slope stability analysis’. *Int. Journal of Geomechanics ASCE*, under review.
5. Utili S., Abd A.* (2018) Discussion on ‘Seismic displacement along a log-spiral failure surface with crack using rock Hoek–Brown failure criterion’. *Soil dynamics and Earthquake Engineering*, 108: 199-200.
3. Zhao T.*, Crosta GB, Dattola G, Utili S. (2018). Dynamic Fragmentation of Jointed Rock Blocks During Rockslide Avalanches: Insights From Discrete Element Analyses. *Journal of Geophysical Research Solid Earth*, 123: 3250-3269.
4. Abd A.*, Utili S. (2017). Design of geosynthetic - reinforced slopes in cohesive backfills. *Geotextiles and Geomembranes*, 45: 627-641.
5. Utili S., Crosta GB., Take A. (2017). Preface of Special Issue on ‘Monitoring, physical and numerical modelling of landslides and debris flows’, *Engineering Geology*, 219: 1-3.
6. Zhao T.*, Crosta GB, Utili S., De Blasio FV, (2017) Investigation of rock fragmentation during rockfalls and rock avalanches via 3-D discrete element analyses. *Journal of Geophysical Research Earth Surface*, 122, 678–695.
7. Voulgari C.*, Utili S. (2017). A general analytical solution for the evolution of cliffs accounting for strength degradation, seismic action, formation of tension cracks and seepage. *Engineering Geology*, 219: 92-106.
8. Wang HN, Zheng GS, Utili S., Jiang MJ, Wu L (2017). Analytical solutions of stresses and displacements for deeply buried twin tunnels in viscoelastic rock. *International Journal of Rock Mechanics & Mining Sciences*, 93: 13-29.
9. Utili S., Abd A.* (2016). On the stability of fissured slopes subject to seismic action. *International Journal for Numerical and Analytical Methods in Geomechanics*, 40(5), 785–806.
10. Zhao T.*, Utili S., Crosta GB. (2016). Rockslide and impulse wave modelling in the Vajont reservoir by DEM-CFD analyses. *Rock Mechanics and Rock Engineering*, 49(6): 2437-2456.
11. Jiang MJ., Shen Z., Utili S. (2016). DEM modeling of cantilever retaining excavations: implications for lunar constructions. *Engineering Computations*, 33(2), 366 - 394.
12. Jiang MJ., Zhu F., Utili S. (2015). Investigation into the effect of backpressure on the mechanical behavior of methane-hydrate-bearing sediments via DEM analyses. *Computers and geotechnics*, 69: 551-563.
13. Utili S. (2015). Discussion of ‘Limit analysis of slopes with cracks: Comparisons of results’. *Engineering Geology*, 197: 306-307.
14. Boon CW.*, Houlsby GT., Utili S., (2015). DEM modelling of a jointed rock beam with emphasis on interface properties. *Geotechnique letters*, 5: 49–55.
15. Wang HN., Utili S., Jiang MJ., He P. (2015). Analytical solutions for tunnels of elliptical cross-section in rheological rock accounting for sequential excavation. *Rock mechanics and rock engineering*, 48(5): 1997–2029.
16. Boon CW.*, Houlsby GT., Utili S. (2015). A new rock slicing method based on linear programming. *Computers and geotechnics*, 65: 12–29.
17. Utili S., Zhao T.*, Houlsby GT. (2015) 3D DEM investigation of granular column collapse: Evaluation of debris motion and its Destructive Power. *Engineering Geology Special Issue on ‘Advances in engineering geology for landslides and slope stability problems’*, 186: 3-16. 41 citations (Scopus)
The paper presents a systematic analysis via 3D Distinct Element Method simulations of dry granular flows generated by the collapse of prismatic columns of various dimensions. This represents a first step towards achieving a computational tool able to quantitatively predict the destructive power of granular flows at any location of interest. The work is also useful for the design of engineering works for natural hazard mitigation.
18. Murugaratnam K.*, Utili S., Petrinic N. (2015). A combined DEM-FEM numerical method for Shot Peening parameter optimisation. *Advances in Engineering Software*, 79: 13-26. 24 citations (Scopus)
A new numerical modelling approach capable of simulating efficiently Shot Peening (SP) processes of metal components of industrial interest was developed by combining the Discrete Element Method (DEM) with the Finite Element Method (FEM). A systematic parametric study was conducted to investigate the influence of the SP parameters on the development of residual stresses. The methodology showcased in the paper has the potential to replace the current method to determine SP parameter based on expensive destructing testing by numerical modelling.
19. Boon CW.*, Houlsby GT., Utili S. (2015). Designing tunnel support in jointed rock masses via the DEM. *Rock mechanics and rock engineering*, 48(2): 603-632. 19 citations (Scopus)

A systematic approach of using the distinct element method (DEM) to provide useful insights for tunnel support in moderately jointed rock masses is illustrated. A comprehensive parametric analysis investigating various tunnel support options (e.g. bolt bonded length, bolt spacing, bolt length, bolt pretension, bolt stiffness and lining thickness on the tunnel convergence) was carried out showing that DEM analyses can be successfully employed in the preliminary design phase of tunnel supports to determine the main parameters of a support consisting of rock bolts or one lining or a combination of both.

20. Utili S., Castellanza R., Galli A., Sentenac P. (2015). Novel approach for health monitoring of earthen embankments. *Journal of Geotechnical and Geoenvironmental Engineering ASCE*, 141(3): 04014111. DOI: 10.1061/(ASCE)GT.1943-5606.0001215.
21. Zhao T.*, Houlsby GT, Utili S. (2014). Investigation of granular batch sedimentation via DEM-CFD coupling. *Granular matter*, 16(6): 921-932.
22. Boon CW.*, Houlsby GT., Utili S. (2014). New insights in the 1963 Vajont slide using 2D and 3D Distinct Element Method analyses. *Geotechnique*, 64(10): 800-816. 27 citations (Scopus)
The 1963 Vajont rock slide can be said to be the most studied slide in the scientific literature due to the complexity of establishing the causes at the origin of the event and its catastrophic consequences (>2500 casualties). The paper showcases some useful numerical techniques developed ad hoc for DEM analyses to investigate the stability of large-scale slopes and shed new light on the physical processes that may have originated the slide.
23. Utili S. (2014). Discussion on “Stability assessment of slopes with cracks using limit analysis”. *Canadian Geotechnical Journal*, 51: 822-825.
24. Jiang MJ., Zhu F., Liu F., Utili S. (2014). A bond contact model for methane hydrate bearing sediments with inter-particle cementation. *International Journal for Numerical and Analytical Methods in Geomechanics*, 38(17): 1823-1854. 28 citations (Scopus)
In the paper a bond model based on experimentally validated contact laws for cemented granules is introduced to describe the mechanical behaviour of methane hydrate bonds. A realistic bond model is key for realistic DEM simulations of methane hydrate bearing sands. The research has made it possible to employ the DEM for the simulation of the effect of methane extraction from methane hydrate bearing sands.
25. Wang HN., Utili S., Jiang MJ. (2014). An analytical approach for the sequential excavation of axisymmetric lined tunnels in viscoelastic rock. *International Journal of Rock Mechanics and Mining Sciences*, 68: 85–106.
26. Crosta GB., Utili S., De Blasio, Castellanza R. (2014). Reassessing rock mass properties and slope instability triggering conditions in Valles Marineris, Mars. *Earth and Planetary Science Letters*, 388: 329-342.
27. Dattola G., Di Prisco C, Redaelli I, Utili S. (2014). A distinct element method numerical investigation of compaction processes in highly porous cemented granular materials. *International Journal for Numerical and Analytical Methods in Geomechanics*, 38(11): 1101–1130.
28. Wang HN., Li Y., Ni Q., Utili S., Jiang MJ, Liu F. (2013). Analytical solutions for the construction of deeply buried circular tunnels with two liners in rheological rock. *Rock Mechanics and Rock Engineering*, 46(6): 1481-1498.
29. Jiang M., Zhang W., Sun Y., Utili S. (2013). An investigation on loose cemented granular materials via DEM analyses. *Granular Matter*, 15(1): 65-84. **Paper award winner as the most cited in the last 5 years in the Journal.**
30. Utili S. (2013). Investigation by limit analysis on the stability of slopes with cracks. *Geotechnique*, 63(2): 140-154.
31. Boon CW.*, Houlsby GT, Utili S. (2013). A new contact detection algorithm for three dimensional non-spherical particles. *Powder Technology*, Special Issue on DEM, 248: 94-102.
32. Boon CW.*, Houlsby GT., Utili S. (2012). A new algorithm for contact detection between convex polygonal and polyhedral particles in the discrete element method. *Computers and Geotechnics*, 44: 73-82.
33. Utili S., Crosta GB. (2011). Modelling the evolution of natural slopes subject to weathering: Part I. Limit analysis approach. *Journal of Geophysical Research – Earth Surface*, vol. 116, F01016, doi:10.1029/2009JF001557.
34. Utili S., Crosta GB. (2011) Modelling the evolution of natural slopes subject to weathering: Part II. Discrete element approach *Journal of Geophysical Research – Earth Surface*, vol. 116, F01017, doi:10.1029/2009JF001559.
35. Jiang MJ, Yan HB, Zhu HH, Utili S. (2011). Modelling shear behaviour and strain localisation in cemented sands by two dimensional Distinct Element Method Analyses. *Computers and Geotechnics*, 38(1): 14-29. **Second most cited article in the Journal since 2010, 115 citations in Scopus.**
36. Dyer M.R., Utili S., Zielinski M. (2009). Field survey of desiccation fissuring of flood embankments. *Proc. of the Institution of Civil Engineering - Water Management*, 162(3): 221-232. **Paper nominated for an ICE award.**

37. Yin Z.Y., Huang H.W., Utili S., Hicher P.Y. (2009). Modeling rate-dependent behaviors of soft subsoil under embankment loads. *Chinese Journal of Geotechnical Engineering*, 31(1): 109-117.
38. Utili S., Nova R. (2008). DEM analysis of bonded granular geomaterials. *International Journal for Numerical and Analytical Methods in Geomechanics*, 32(17): 1997-2031.
39. Utili S., Yin Z.Y., Jiang M. (2008). Influences of hydraulic uplift pressures on stability of gravity dam. *Chinese Journal of Rock Mechanics and Engineering*, 27(8): 1554-1568.
40. Utili S., Nova R. (2007). On the optimal profile of a slope. *Soils and foundations*, 47(4): 717-729.
41. Utili S. (2005). An analytical relationship for weathering induced slope retrogression: a benchmark. *RIG (Italian Geotechnical Journal)*, 39(2): 9-30.

BOOKS and BOOK CHAPTERS

42. Utili S. (2009). Evolution of natural slopes subject to weathering: an analytical and numerical study. Publisher: VDM Verlag; ISBN: 978-3-8364-5904-4.
43. Utili S. and Crosta G.B. (2014). "Analysis tools for mass movement assessment" Chapter 13, p. 441-465 in the Volume *Landslides hazards, risks and disasters*, Doi: org/10.1016/B978-0-12-396452-6.00013-6, T.R.H. Davies editor, published by Elsevier as part of the peer reviewed collection: *Elsevier's hazards and disaster*.

PAPERS IN PEER REVIEWED CONFERENCE PROCEEDINGS

44. Utili S., Zhao T.*, Crosta G.B. (2017) Distinct Element Method computational fluid dynamics analyses for reservoir landslide modelling. *Particles 2017*, 497 – 503, Hannover (Germany).
45. Abd A.*, Utili S. (2017) Design of geosynthetic reinforced slopes in cohesive soils subject to seismic action. *Procedia Engineering*, 189: 898-907, *Transportation Geotechnics & Geoecology*, Saint Petersburg (Russia).
46. Utili S., Castellanza R., Galli A., Sentenac P. (2017) A non-invasive portable geophysical tool to monitor water content in earthen long linear infrastructures. *Procedia Engineering*, 189: 86-93 *Transportation Geotechnics & Geoecology*, Saint Petersburg (Russia).
47. Boon C.W.*, Lazari M., Utili S. (2017) A new rock slicing algorithm with reduced data structure for Discrete Element Method Analyses for rock mechanics. Invited contribution published in *Proceedings of the 7th Int. Conf. on Discrete Element Methods*, Springer Proceedings in Physics vol. 188: 863-870.
48. Bowen Y*, Utili S. Jones B. (2016) Numerical analysis of TBM tunnelling in sand using a state parameter model. *Int Conf on Geomechanics, geo-energy & geo-resources*, Melbourne (Australia), theme 8: 43-50.
49. Wride N.M.*, Geng X., Utili S. (2016) An evaluation of the soft soil creep model based on the CGSE Ballina clay test embankment. *Embankment and Footing Prediction Symposium*, Sloan & Kelly eds., Newcastle (Australia), 1-11.
50. Zhao T.*, Dai F., Crosta G.B., De Blasio F., Utili S. (2016). DEM simulations of simple fragmentation experiments. *12th Int. Symp on Landslides*, Naples (Italy), CRC Press Taylor & Francis, vol. 3: 2113-2119.
51. Abd A.*, Utili S., (2016). Geosynthetics layout optimization for reinforced soil slopes subject to cracks. *12th Int. Symp on Landslides*, Naples (Italy), CRC Press Taylor & Francis, vol. 2: 295-300.
52. Voulgari C.*, Utili S. (2016) Experimental modelling of successive slope failures due to heavy rainfall. *12th Int. Symp on Landslides*, Naples (Italy), CRC Press Taylor & Francis, vol. 3: 2007-2012.
53. Voulgari C.*, Utili S., Crosta, G.B., Dattola, G., Hermann, R.L. (2016). A model for earthquake driven slope instabilities and morphologic landscape evolution. *12th Int. Symp on Landslides*, Naples (Italy), CRC Press Taylor & Francis, vol 3: 2013-2021.
54. Utili S. (2016). Non-invasive geophysics for the water content monitoring of earthen embankments. Invited contribution *6th Workshop on Civil Structural Health Monitoring*, Queen's University, Belfast (UK).
55. Voulgari C.*, Utili S. (2016). Small scale tests on slope failures on different surfaces. *European Geosciences Union*, Vienna (Austria), vol. 18, paper 18359.
56. Voulgari C.*, Utili S. (2016). Influence of pore pressure on the successive failures of intact slopes. *European Geosciences Union*, Vienna (Austria), vol. 18, paper 18358.
57. Utili S. (2015). Foreword to the International Symposium on Geohazards and Geomechanics. *IOP Conference Series: Earth and Environmental Science*, vol 26, paper 011001.
58. Wu W.*, Utili S. (2015). On the optimal profile of a rock slope. *ISRM Congress 2015 Proceedings – Int. Symposium on Rock Mechanics* - ISBN: 978-1-926872-25-4.
59. Zhao T.*, Utili S., GB. Crosta (2015). A coupled DEM-CFD method for impulse wave modelling. *European Geosciences Union*, Vienna (Austria), vol 17, paper 4883.
60. Voulgari C.*, Utili S., Castellanza R. (2015). Small scale tests on the progressive retreat of soil slopes. *European Geosciences Union*, Vienna (Austria), vol 17, paper 12283.
61. Zhao T.*, Houlby G.T., Utili S. (2015). Investigation of submerged debris flows via CFD-DEM coupling. *Int. Symp on Geomechanics from Micro to Macro IS Cambridge* – Soga et al. (Eds), Taylor & Francis Group: 497-502.

62. Macaro G.*, Utili S., Martin CM. (2015). DEM analyses of pipe-soil interaction for offshore pipelines on sand. *Int. Symp on Geomechanics from Micro to Macro IS Cambridge – Soga et al. (Eds), Taylor & Francis Group: 595-600.*
63. Frattini P., Crosta GB., De Blasio F., Castellanza R., Utili S., Lucas A. (2014). Crater shock damage zone and landslide size distribution in Valles Marineris, Mars. *45th Lunar and Planetary Science Conference*, paper 2024. Woodlands, Texas (USA).
64. Di Prisco C., Rinaldi G., Utili S. (2013) Numerical DEM analyses under simple shear conditions: the steady state for granular matters under large strain rates. *3rd Int. Conf. on Particles based methods*, M. Bischoff, E. Oñate, D.R.J. Owen, E. Ramm & P. Wriggers (Eds), Stuttgart (Germany): 764-774.
65. De Blasio FV., Crosta GB., Castellanza R., Utili S. (2013). Slope stability analysis of Valles Marineris, Mars. *European Geosciences Union*, Vienna (Austria), vol 15, session PS2.7, paper 11004.
66. Boon CW.*, Houlsby GT., Utili S. (2013). 3D DEM analyses of the 1963 Vajont rock slide. *European Geosciences Union*, Vienna (Austria), vol 15, session NH3.13, paper 13838.
67. Jiang MJ., Shen Z., Utili S. (2013). DEM modeling of failure mechanisms induced by excavations on the Moon. *European Geosciences Union*, Vienna (Austria), vol 15, session NH3.13, paper 13842.
68. Crosta GB., Utili S., Castellanza R., Agliardi F., Bistacchi A., Boon C.W. (2013). 1963 Vajont rock slide: a comparison between 3D DEM and 3D FEM. *European Geosciences Union*, Vienna (Austria), vol 15, session NH3.13, paper: 14214.
69. Zhao T.*, Houlsby GT., Utili S. (2013). DEM simulations of the collapse of submerged granular columns. *European Geosciences Union*, Vienna (Austria), vol 15, session NH3.13, paper 13845.
70. Crosta, GB., Utili S., De Blasio FV., Castellanza, R. (2013). Landslides in Valles Marineris, Mars: an analysis of failure types to ascertain rock mass properties, predisposing and triggering factors. *44th Lunar and Planetary Science Conference*, paper 1624. Woodlands, Texas (USA).
71. Modenese C.*, Utili S., Houlsby GT (2012). DEM Modelling of Elastic Adhesive Particles with Application to Lunar Soil. *Earth and Space 2012, Proc. of the 13th Aerospace Division Conference on Engineering, Science, Construction, and Operations in Challenging Environments*, sponsored by ASCE held in Pasadena (Ca, USA), pp. 45-54. doi: 10.1061/9780784412190.006. **The paper was given Award for 2nd best.**
72. Modenese C.*, Utili S., Houlsby GT (2012). A Study of the influence of surface energy on the mechanical properties of lunar soil using DEM. In “Discrete Element Modelling of Particulate Media” Proc of the *Int Symp on Discrete Element Modelling of Particulate Media* (Birmingham, UK), Royal Society of Chemistry Sp Pub 339: 69-75.
73. Zhao T.*, Houlsby GT., Utili S. (2012). Numerical simulation of the collapse of granular columns using DEM. In “Discrete Element Modelling of Particulate Media” Proc of the *Int Symp on Discrete Element Modelling of Particulate Media* (Birmingham, UK), Royal Society of Chemistry Sp Pub 339: 133-140.
74. Macaro G.*, Utili S. (2012). DEM triaxial tests of a seabed sand. In “Discrete Element Modelling of Particulate Media” Proc of the *Int Symp on Discrete Element Modelling of Particulate Media* (Birmingham, UK), Royal Society of Chemistry Sp Pub 339: 203-211.
75. Modenese C.*, Utili S., Houlsby GT (2012). A numerical investigation of quasi-static conditions for granular media. In “Discrete Element Modelling of Particulate Media” Proc of the *Int Symp on Discrete Element Modelling of Particulate Media* (Birmingham, UK), Royal Society of Chemistry Sp Pub 339: 187-195.
76. Crosta GB., Castellanza R., De Blasio FV., Utili S. (2012). Slope stability analysis for Valles Marineris, Mars: a numerical analysis of controlling conditions and failure types. EGU, Vienna (Austria), vol 11, paper 11667.
77. Murugaratnam K.*, Utili S (2011). Shot peening optimization using the Discrete Element Method. *11th Int. Conf. on Shot Peening ICSP*, pp. 135-140.
78. Boon CW.*, Houlsby GT, Utili S (2011). A new contact detection algorithm for non-spherical particles in the discrete element method. *Comgeo II, Int Symp on Computational Geomechanics*, Dubrovnik (Croatia), pp. 385-393.
79. Utili S., Crosta GB. (2009). Modelling the evolution of natural cliffs subject to weathering: I. limit analysis approach. EGU, Vienna (Austria), vol 11, paper13723.
80. Utili S., Crosta GB. (2009). Modelling the evolution of natural cliffs subject to weathering: II. Discrete elements approach. EGU, Vienna (Austria), vol 11, paper 13725.
81. Utili S. and Nova R. (2008). Calibration of micromechanical parameters to reproduce a frictional cohesive continuum by the Distinct Element Method. *12st Int. Conf. of Association for Computer Methods & Advances in Geomechanics (IACMAG)*, Goa (India), pp. 163-170.
82. Utili S. and Nova R. (2008). A study of cliffs subject to degradation by DEM (PFC2D). *1st Int. FLAC/DEM Symp. on Numerical Modelling*, organised by Itasca CG, Minneapolis (USA), pp. 11-19.
83. Zielinski M., Sentenec P., Utili S., Dyer M. (2008). Influence of the weather changes on the desiccation fissuring propagation and stability of flood embankments. *11th Baltic Sea Geotechnical Conf.*, Gdansk (Poland), pp. 647-656.

84. Utili S., Dyer M., Redaelli M. and Zielinski M., (2008). Desiccation fissuring induced failure mechanisms for clay levees. *10th Int. Symp. on Landslides and Engineered Slopes*, ISSMGE, Xian (China), pp. 1309-1314.
85. Redaelli M., Utili S. and Dyer M. (2008). A proposal for a reliability rating system for fluvial flood defence embankments in the United Kingdom. *10th Int. Symp. on Landslides and Engineered Slopes*, ISSMGE, Xian (China), pp. 1965-1970.
86. Utili S., Dyer MR., Zielinski M. (2008). Failure mechanisms and ultimate resistance of earth flood embankment with attention to desiccation fissuring. *Canadian Society for Civil Engineering Annual Conference*, Quebec City (Canada), 2719-2727.
87. Dyer M., Utili S. and Smith P., (2007). The geotechnical inspection and assessment of flood defence embankments. *16th SouthEast Asia Geotechnical Conf.*, Kuala Lumpur (Malaysia), pp. 1-5, CD-ROM.
88. Utili S., (2007). Improving the shape of man made slopes. *Proc. 1st North American Landslide Conf.*, ASCE, Vail (USA), pp. 1246-1258.
89. Utili S. and Nova R., (2006). Weathering induced slope retrogression by limit analysis. *Proc. Int. Symp. on Ultimate Limit States of Geotechnical Structures*, Ecole Nationale des Ponts et Chaussées, Paris (France), pp. 403-412.
90. Calvetti F., Nova R. and Utili S., (2005). On modelling rock slope retreat by the Discrete Element Method. *Proc. Int. Powders & Grains*, Stuttgart (Germany), pp. 671-675.
91. Locatelli S., Utili S. (2004). Experimental investigation on anchorage systems in concrete. *Proc. XV CTE*, Bari (Italy), pp. 477-483 (in Italian).

REVIEWED TECHNICAL REPORTS

92. Dyer M., Utili S., Zielinski M., (2007). Influence of the desiccation fine fissuring on the stability of flood embankments. FRMRC EPSRC grant GR/S76304/01, Report UR11, <http://web.sbe.hw.ac.uk/frmrc/reports.htm?pane=1>.
93. Allsop W., Kortenhaus A., Morris M., Buijs F., Hassan R., Young M., Doorn N., der Meer J., Van Gelder P., Dyer M., Redaelli M., Utili S., Visser P., Bettess R., Horst W., (2007). Failure mechanisms for flood defence structures. EC FP6 FLOODsite task 4, Report T04-06-01.

THESES

94. Utili S. (2000). Uplift pressure influence on gravity dam stability. *Laurea* (Diploma) thesis, Politecnico di Milano.
95. Utili S. (2004). Evolution of natural slopes subject to weathering: an analytical and numerical study. PhD thesis, Politecnico di Milano.

REVIEWER FOR (ISI Journals)

1) *Geotechnique*; 2) *Geotechnique Letters*; 3) *Journal of Geotechnical and Geoenvironmental Engineering ASCE*; 4) *Engineering Geology*; 5) *Rock Mechanics & Rock Engineering*; 6) *Canadian Geotechnical Journal*; 7) *Computers and Geotechnics*; 8) *International Journal for Numerical and Analytical Methods in Geomechanics*; 9) *Soils and Foundations*; 10) *Journal of Engineering Mechanics ASCE*; 11) *Geophysical Research Letters*; 12) *Mechanics of Materials*; 13) *Powder Technology*; 14) *Journal of Geophysical Research - Earth Surface*; 15) *Journal of Geophysical Research – Solid Earth*; 16) *Landslides*; 17) *Journal of Rock Mechanics and Geotechnical Engineering*; 18) *ICE Proceeding of Geotechnical Engineering*; 19) *Natural Hazards*; 20) *Shock and Vibration* 21) *Environmental Earth Sciences*; 22) *International Journal of Mechanical Sciences*; 23) *Italian Geotechnical Journal*; 24) *Soil dynamics and Earthquake Engineering*; 25) *Energy* 26) *Sustainability*; 27) *International Journal of Geomechanics ASCE*.

LANGUAGE SKILLS

- English: fluent.
- French: good knowledge (CELF certificate).
- Italian: mother tongue