

### Publications on international journals

1. Zhang, Y., **Buscarnera, G.** (2014). Prediction of breakage-induced couplings in unsaturated granular soils. To appear in *Géotechnique*.
2. Mihalache, C., **Buscarnera, G.** (2014). Is wetting-collapse and unstable compaction process? *J. Geotech. Geoenviron. Eng.*, 141(2).
3. Das, A., **Buscarnera, G.** (2014). Compaction localization in high-porosity calcarenite: numerical modeling of axisymmetric loading paths. *Int. J. Rock. Mech. Min. Sc.*, 71, 91-104.
4. **Buscarnera, G.**, Mihalache, C. (2014). Instability of unsaturated soils: a review of theoretical methods. *Journal of Geoenvironmental Sciences*, 2, 39-65
5. Zhang, Y., **Buscarnera, G.** (2014). Grain size dependence of clastic yielding in unsaturated granular soils. *Granular Matter*, 16:469–483.
6. **Buscarnera, G.**, Laverack, R. (2014). Path-dependence of the potential for compaction banding: theoretical predictions based on a plasticity model for porous rocks. *Journal of Geophysical Research – Solid Earth*, 119, 3, 1882–1903.
7. Gan, Y., Maggi, F., **Buscarnera, G.**, Einav, I. (2013). A particle-water based model for water retention hysteresis. *Géotechnique Letters*, 3, 152 –161.
8. **Buscarnera, G.** (2013) Uniqueness and existence in plasticity models for unsaturated soils. Published online in *Acta Geotechnica*, 9, 313–327.
9. Mihalache, C., **Buscarnera, G.** (2013). Mathematical identification of diffuse and localized instabilities in fluid-saturated sands. *Int. J. Numer. Anal. Meth. Geomech*, 38: 111–141.
10. **Buscarnera G.**, di Prisco C. (2013) Soil stability and flow slides in unsaturated shallow slopes: how can saturation events trigger liquefaction processes? *Géotechnique*, 63(10), 801 –817.
11. **Buscarnera G.** (2012) A conceptual model for the chemo-mechanical degradation of granular geomaterials. *Géotechnique Letters*, 2, 149-154.
12. **Buscarnera G.**, Whittle A.J. (2012) Model prediction of static liquefaction: the influence of the initial state on potential instabilities. *Journal of Geotech. and Geoenv. Eng.*, 139(3), 420-432.
13. **Buscarnera G.**, Whittle A.J. (2012) Constitutive modelling approach for evaluating the triggering of flow slides. *Canadian Geotechnical Journal*, 49(5): 499-511.
14. **Buscarnera G.**, Einav I. (2012). The yielding of brittle unsaturated granular soils. *Géotechnique*, 62(2), 147 – 160.
15. **Buscarnera G.**, di Prisco C. (2012) Discussing the definition of second-order work in unsaturated soils, *Int. J. Numer. Anal. Meth. Geomech.*, 36: 36-49.
16. **Buscarnera G.**, di Prisco C. (2011) Stability criteria for unsaturated shallow slopes, *Géotechnique Letters*, 1(4), 85-90.
17. **Buscarnera G.**, Dattola G., di Prisco, C. (2011) Controllability, uniqueness and existence of the incremental response: a mathematical criterion for elastoplastic constitutive laws, *Int. J. Solids and Struct.*, 48(13), 1867-1878.
18. **Buscarnera G.**, Nova R. (2011) Modelling instabilities in triaxial testing on unsaturated soil specimens, *Int. J. Numer. Anal. Meth. Geomech.*; 35: 179–200.
19. di Prisco C., **Buscarnera G.** (2010) Design, construction and monitoring of light-weight embankments (in Italian), *Italian Geotechnical Journal*, 3, 10-28.
20. **Buscarnera G.**, Nova R. (2009) Loss of controllability in unsaturated soils, *European Journal of Environmental and Civil Engineering* , 13: 235–250.
21. **Buscarnera G.**, Nova R. (2009) An elastoplastic strainhardening model for soil allowing for hydraulic bonding-debonding effects, *Int. J. Numer. Anal. Meth. Geomech.*; 33: 1055–1086.

### Book Chapters

22. **Buscarnera G.**, Nova R. “Loss of Controllability in Partially Saturated Soils”. Bifurcations, Instabilities and Degradations in Geomaterials, R. Wan ed., Springer Series in Geomechanics and Geoenvironment, 2011, Volume 0, 53-68, DOI: 10.1007/978-3-642-18284.

### Contributions to international and national conferences

23. **Buscarnera, G.**, Cusatis, G., Zubelewicz, A., and Bažant, Z. (2014) Shale Fracturing for Energy Recovery: Current Issues and Review of Available Analytical and Computational Models. *Shale Energy Engineering* 2014: pp. 168-179
24. Mihalache, C., **Buscarnera, G.**, (2014) A framework to assess the controllability of wetting processes on unsaturated collapsible soils. *Proceedings of the 10th International Workshop on Bifurcation and Degradation in Geomaterials*, Hong Kong
25. Zhang, Y., **Buscarnera, G.**, (2014) Model predictions of hydro-mechanical coupling in unsaturated crushable soils. *Proceedings of the 6th International Conference on Unsaturated Soils*, Sydney
26. Das, A., **Buscarnera, G.**, (2014) Numerical simulation of localized deformations in high-porosity rocks. *Proceedings of the 48th US Rock Mechanics/Geomechanics Symposium*; Minneapolis, USA.
27. **Buscarnera, G.**, Whittle, A. J. (2013) Methodology for Evaluating Liquefaction Susceptibility in Sandy Slopes. *Proceedings of the 18th International Conference on Soil Mechanics and Geotechnical Engineering*, Paris 2013.
28. **Buscarnera, G.**, Einav, I. (2013) Modelling Particle Breakage in Unsaturated Granular Assemblies. *Poromechanics V*: pp. 1400-1409. doi: 10.1061/9780784412992.167
29. **Buscarnera, G.**, di Prisco, C. (2013). Saturation-induced failure: mechanics of a class of unstable processes. *Poromechanics V*: pp. 1237-1244. doi: 10.1061/9780784412992.148
30. **Buscarnera G.**, (2013). Modeling hydraulic and chemical processes in crushable granular materials, *Proc. 47th US Rock Mechanics/Geomechanics Symposium*; San Francisco, USA, June 23-25, 2012, 8 pp.
31. **Buscarnera, G.**, Whittle, A. J. (2013) A Methodology for Evaluating Liquefaction Susceptibility in Shallow Sandy Slopes. In *Geo-Congress 2013 - Stability and Performance of Slopes and Embankments III* (pp. 898-907). ASCE.
32. **Buscarnera G.**, Einav I. (2012). The yielding of unsaturated granular materials. In *Unsaturated Soils: Research and Applications* 2012, Part 1, 23-29, DOI: 10.1007/978-3-642-31343-1\_3.
33. **Buscarnera G.**, (2012). Modeling the onset of bifurcation in porous sedimentary rocks, *Proc. 46th US Rock Mechanics/Geomechanics Symposium*; Chicago, USA, June 24-27, 2012, 8 pp.
34. **Buscarnera G.**, di Prisco C. (2012) Stability analysis of unsaturated deposits: effect of soil properties and hydro-mechanical coupling, *Proc. 111<sup>th</sup> International Symposium on Landslides and 2<sup>nd</sup> North American Symposium on Landslides*, eds. Ebderhardt E., Froese C., Keith Turner, A. and Leroueil, S., Banff, Canada, 1745-1751.
35. **Buscarnera G.**, di Prisco C. (2011) Modelling the onset of rainfall-induced landslides, *Proc. 2nd COMGEO*, S. Pietruszczak, G.N. Pande, C. Tamagnini & R. Wan eds., Cavtat-Dubrovnik, Croatia, 173-182.
36. **Buscarnera G.**, Nova R. (2010) Saturation induced instability on bonded geomaterials, *Proc. 4th International Conference on Unsaturated Soils (UNSAT 2010)*; Barcelona, Spain, September 6-8, 2010, pp. 771-777.
37. **Buscarnera G.**, di Prisco (2010) A redefinition of the second-order work for unsaturated soils, *Proc. 9th HSTAM International Congress on Mechanics*, Limassol, July 12-14, 2010, pp. 197-204.
38. **Buscarnera G.**, di Prisco C., Nova R. (2010) The effect of multi-physical perturbations on geomaterial instability: a framework for hydro-mechanical coupling in crushable soils. *Proceedings of the IV European Conference on Computational Mechanics (ECCM 2010)*; Paris, France, May 16-21, 2010, 2 pp.
39. **Buscarnera G.**, Nova R., Vecchiotti M., Tamagnini C., Salciarini D. (2010), Settlement analysis of wind turbines. In: *Soil-Foundation-Structure-Interaction*, R.P. Orense, N. Chow, M.J. Pender (Eds.), pag. 171-178, 26-27 November 2009, Auckland, New Zealand.
40. **Buscarnera G.**, Whittle A.J. (2009) Modelling flow slide triggering in granular materials, *Contribution at the National symposium IARG 2009*, Roma "La Sapienza".
41. **Buscarnera G.**, Nova R. (2009) An investigation on instability loci in partially saturated soils, *Proc. X COMPLAS*, D.R.J. Owen, E. Oñate eds. Barcelona, 2009, 4pp.
42. **Buscarnera G.**, Nova R. (2009) Modelling the onset of instability in oedometric tests on unsaturated bonded soils, *Proc. 1st COMGEO*, S. Pietruszczak, G.N. Pande, C. Tamagnini & R. Wan eds, Juan-les-Pins, France, 226-234.
43. **Buscarnera G.**, Nova R. (2008) Loss of controllability in partially saturated soils, *2nd Euromediterranean Symposium on Advances in Geomaterials and Structures*, Hammamet, 5-7/5/2008, 3, 481-486.
44. Betti D., **Buscarnera G.**, Castellanza R., Nova R. (2008) Numerical analysis of the life-time of an abandoned gypsum mine, *Proc. 12th I.C. IACMAG*, Goa, 1210-1218.