

Giuseppe Mortara

Curriculum Vitae, July 2018

Contents CV

Personal data, career and education

Personal data	1
Current position	1
Career and Education	1

Research activities

Research topics	2
Papers in international journals	2
Keynote lectures	3
Invited lectures	3
Papers in proceedings of international conferences	3
Papers in proceedings of national conferences	4
PhD Thesis	4
Bibliometrics	4
Invited seminars	5
Presentations in international conferences	5
Presentations in national conferences	5
Research Quality Evaluation	6
Years 2011-2014	6
Years 2006-2010	6
Stages in national and international research centres	6
Collaborations with universities and research institutes	7
Editorial activity	7
Organization of conferences and seminars	7
Activity within PhD Programmes	7

Teaching

Teaching responsibilities	9
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Other information

Associations	10
Computer skills	10
Languages	10

Personal data, career and education

Personal data

Name and surname	Giuseppe Mortara
Nationality	Italian
Place and date of birth	Melito di Porto Salvo (Reggio Calabria, Italy), March 25, 1969
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Current position

Associate professor of Geotechnics at the University of Reggio Calabria (Italy).

Career and Education

- 2015** **Associate Professor** of Geotechnics at the University of Reggio Calabria (Italy)
- 2014** **National Scientific Qualification** as Associate Professor of Geotechnics
- 2005** **Confirmation** as University Lecturer of Geotechnics
- 2002** **University Lecturer** of Geotechnics at the University of Reggio Calabria (Italy)
- 2001** **Research Associate** of Geotechnics at the Department of Mechanics and Materials of the University of Reggio Calabria (Italy) (one-year grant)
- 2001** **PhD degree** in Geotechnical Engineering from Politecnico di Torino (Italy)
- 1998** Professional **qualification** as an engineer
- 1997** **Master's Degree** *Cum Laude* in Civil Engineering from University of Reggio Calabria (Italy)

Research activities

Research topics

The research topics of the writer can be summarised as follows:

- experimental behaviour of sand-structure interfaces under monotonic and cyclic conditions;
- constitutive modelling of sand-structure interface behaviour under monotonic and cyclic conditions;
- numerical modelling of piles in sand;
- formulation of yield and failure criteria for geomaterials;
- constitutive modelling of sand behaviour;
- constitutive modelling of plastic adaptation.

The list of publications are reported in the following order:

- international journals
- keynote lectures
- invited lectures
- papers in international conferences
- papers in national conferences
- papers presented at the Annual Meetings of the Geotechnical Researchers (IARG)

Papers in international journals

- [J11] **Mortara G. (2015).** A constitutive framework for the elastoplastic modelling of geomaterials. *International Journal of Solids and Structures* 63(15 June 2015), 139-152, ISSN 0020-7683. Publication date: 14/03/2015. IF 2015: 2.081. DOI: [10.1016/j.ijsolstr.2015.02.047](https://doi.org/10.1016/j.ijsolstr.2015.02.047).
- [J10] **di Prisco C., Mortara G. (2013).** A multi-mechanism constitutive model for plastic adaption under cyclic loading. *International Journal for Numerical and Analytical Methods in Geomechanics* 37(18), 3071-3086, ISSN 0363-9061. Publication date: 19/02/2013. IF 2013: 1.561. DOI: [10.1002/nag.2178](https://doi.org/10.1002/nag.2178).
- [J09] **Lehane B.M., Schneider J.A., Lim J.K., Mortara G. (2012).** Shaft friction from instrumented displacement piles in an uncemented calcareous sand. *Journal of Geotechnical and Geoenvironmental Engineering, ASCE* 138(11), 1357-1368, ISSN 1090-0241. Publication date: 11/02/2012. IF 2012: 1.156. DOI: [10.1061/\(ASCE\)GT.1943-5606.0000712](https://doi.org/10.1061/(ASCE)GT.1943-5606.0000712).
- [J08] **Mortara G., Ferrara D., Fotia G. (2010).** Simple model for the cyclic behavior of smooth sand-steel interfaces. *Journal of Geotechnical and Geoenvironmental Engineering, ASCE* 136(7), 1004-1009, ISSN 1090-0241. Publication date: 06/01/2010. IF 2010: 0.687. DOI: [10.1061/\(ASCE\)GT.1943-5606.0000315](https://doi.org/10.1061/(ASCE)GT.1943-5606.0000315).

- [J07] **Mortara G. (2010).** A yield criterion for isotropic and cross-anisotropic cohesive-frictional materials. *International Journal for Numerical and Analytical Methods in Geomechanics* 34(9), 953-977, ISSN 0363-9061. Publication date: 13/10/2009. IF 2010: 1.167. DOI: [10.1002/nag.846](https://doi.org/10.1002/nag.846).
- [J06] **Mortara G. (2009).** A hierarchical single yield surface for frictional materials. *Computers and Geotechnics* 36(6), 960-967, ISSN 0266-352X. Publication date: 08/04/2009. IF 2009: 1.229. DOI: [10.1016/j.compgeo.2009.03.007](https://doi.org/10.1016/j.compgeo.2009.03.007).
- [J05] **Mortara G. (2008).** A new yield and failure criterion for geomaterials. *Géotechnique* 58(2), 125-132, ISSN 0016-8505. Publication date: 01/03/2008. IF 2008: 1.197. DOI: [10.1680/geot.2008.58.2.125](https://doi.org/10.1680/geot.2008.58.2.125).
- [J04] **Mortara G., Mangiola A., Ghionna V.N. (2007).** Cyclic shear stress degradation and post-cyclic behaviour from sand-steel interface direct shear tests. *Canadian Geotechnical Journal* 44(7), 739-752, ISSN 1208-6010. Publication date: 01/07/2007. IF 2007: 0.542. DOI: [10.1139/t07-019](https://doi.org/10.1139/t07-019).
- [J03] **Boulon M., Ghionna V.N., Mortara G. (2003).** A strain-hardening elastoplastic model for sand-structure interface under monotonic and cyclic loading. *Mathematical and Computer Modelling* 37(5-6), 623-630, ISSN 0895-7177. Publication date: 24/03/2003. IF 2003: 0.425. DOI: [10.1016/S0895-7177\(03\)00056-6](https://doi.org/10.1016/S0895-7177(03)00056-6).
- [J02] **Mortara G., Boulon M., Ghionna V.N. (2002).** A 2-D constitutive model for cyclic interface behaviour. *International Journal for Numerical and Analytical Methods in Geomechanics* 26(11), 1071-1096, ISSN 0363-9061. Publication date: 12/08/2002. IF 2002: 0.621. DOI: [10.1002/nag.236](https://doi.org/10.1002/nag.236).
- [J01] **Ghionna V.N., Mortara G. (2002).** An elastoplastic model for sand-structure interface behaviour. *Géotechnique* 52(1), 41-50, ISSN 0016-8505. Publication date: 01/02/2002. IF 2002: 0.844. DOI: [10.1680/geot.52.1.41.40826](https://doi.org/10.1680/geot.52.1.41.40826).

Keynote lectures

- [KL01] **Ghionna V.N., Mortara G., Porcino D. (2007).** *Caratterizzazione e modellazione dei terreni per la previsione del comportamento delle opere geotecniche*. Relazione Generale, XXIII Convegno Nazionale di Geotecnica, Padova, Abano Terme, 16-18 Maggio 2007. Pàtron Editore, ISBN 978 88 555 2927 3, pp. 11-44.

Invited lectures

- [IL01] **Mortara G. (2003).** *Modelling the behaviour of interfaces*. Workshop on Constitutive Modelling and Analysis of Boundary Value Problems in Geotechnical Engineering (3x4), Naples, 22-24 April 2003. Hevelius Edizioni, ISBN 88-86977-36-0, pp. 217-252.

Papers in proceedings of international conferences

- [IC06] **Stutz H., Mortara G., Wuttke F. (2015).** *Simple vs advanced interface model: a comparison using a deterministic quality approach*. 6th International Symposium on Deformation Characteristics of Geomaterials, Rinaldi V.A., Zeballos M.E., Clariá J.J. (eds), Buenos Aires (Argentina), 15-18 November 2015. IOS Press, ISBN 978-1-61499-600-2, pp. 1105-1112.
- [IC05] **Mortara G. (2008).** *Analysis of the interface behavior under cyclic loading*. 2008 Seismic Engineering Conference commemorating the 1908 Messina and Reggio Calabria Earthquake (MERCEA08), A. Santini and N. Moraci (eds), Reggio Calabria (Italy), 8-11 July 2008. American Institute of Physics Conference Proceedings, Part One, ISBN 978-0-7354-0542-4, pp. 658-665.
- [IC04] **Mortara G., Mangiola A., Ghionna V.N. (2005).** *Experimental and theoretical study of sand-structure frictional interaction*. 11th International Conference of IACMAG, G. Barla, M. Barla (eds), Torino, 19-24 June 2005. Pàtron Editore, Vol 1, ISBN 88-555-2812-2, pp. 425-432.
- [IC03] **Mortara G., Mangiola A., Ghionna V.N. (2004).** *Cyclic behaviour of sand-structure interfaces*. International Conference on Cyclic Behaviour of Soils and Liquefaction Phenomena, CBS04, T. Triantafyllidis (eds), Bochum (Germany), 31 March - 2 April 2004. Balkema Publishers, ISBN 90 5809 620 3, pp. 173-178.
- [IC02] **Houlsby G.T., Mortara G. (2004).** *A continuous hyperplasticity model for sands under cyclic loading*. International Conference on Cyclic Behaviour of Soils and Liquefaction Phenomena, CBS04, T. Triantafyllidis (eds), Bochum (Germany), 31 March - 2 April 2004. Balkema Publishers, ISBN 90 5809 620 3, pp. 21-26.
- [IC01] **Ghionna V.N., Mortara G., Vita G.P. (2003).** *Sand-structure interface behaviour under cyclic loading from constant normal stiffness direct shear tests*. Third International Conference on Deformation Characteristics of Geomaterials, H. Di Benedetto, T. Doanh, H. Geoffroy, C. Sauzéat (eds), Lyon, 22-24 September 2003. Balkema Publishers, ISBN 90 5809 604 1, pp. 231-237.

Papers in proceedings of national conferences

- [NC02] **Dattola G., Fotia G., Mortara G. (2016).** *An approach for rotational hardening in geotechnical modelling*. Procedia Engineering 158, 104-109. VI Italian Conference of Researchers in Geotechnical Engineering, CNRIG2016 - Geotechnical Engineering in Multidisciplinary Research: from Microscale to Regional Scale, 22-23 September 2016, Bologna (Italy). Elsevier (ISSN 1877-7058).
- [NC01] **Mortara G., Masarati P. (2007).** *Sperimentazione e modellazione delle interfacce terreno-struttura: applicazione per la previsione della portata laterale dei pali in sabbia*. XXIII Convegno Nazionale di Geotecnica, Padova, Abano Terme, 16-18 Maggio 2007. Pàtron Editore, ISBN 978 88 555 2927 3, pp. 309-316.

PhD Thesis

Mortara, G. (2001). *An elastoplastic model for sand-structure interface behaviour under monotonic and cyclic loading*. PhD Thesis, Politecnico di Torino (Italy).

Bibliometrics

— Citations (including self citations, data from Scopus): 222

- Citations (excluding self citations, data from Scopus): 199
- H-index (including self citations, data from Scopus): 8
- H-index (excluding self citations, data from Scopus): 7
- Average number of authors per paper: 2.29
- Average number of authors per journal paper: 2.18

Invited seminars

- [IS01] *Sand-structure interface behaviour*. Research colloquia at the Department of Civil Engineering of Oxford University, Trinity Term, 21 June 2002.

Presentations in international conferences

- [PIC02] *Analysis of the interface behavior under cyclic loading*. 2008 Seismic Engineering Conference commemorating the 1908 Messina and Reggio Calabria Earthquake, (MERCEA'08), Reggio Calabria (Italy), 10 July 2008. Paper [IC05].
- [PIC01] *A strain-hardening elastoplastic model for soil-structure interface under monotonic and cyclic loading*. Symposium on Mathematical Models in Soil Mechanics, Scilla di Reggio Calabria, 21 September 2000. Paper [J03].

Presentations in national conferences

- [PNC01] *Sperimentazione e modellazione delle interfacce terreno-struttura: applicazione per la previsione della portata laterale dei pali in sabbia*. XXIII Convegno Nazionale Di Geotecnica. Padova, Abano Terme, 18 Maggio 2007. Paper [NC01].

Research Quality Evaluation

Years 2011-2014

Number of papers: 2.

Grade values: Excellent (1), High (0.7), Medium (0.4), Acceptable (0.1), Limited (0).

[J10] **di Prisco C., Mortara G. (2013).** A multi-mechanism constitutive model for plastic adaption under cyclic loading. *International Journal for Numerical and Analytical Methods in Geomechanics* 37(18), 3071-3086, ISSN 0363-9061.

Rating: **high**

[J09] **Lehane B.M., Schneider J.A., Lim J.K., Mortara G. (2012).** Shaft friction from instrumented displacement piles in an uncemented calcareous sand. *Journal of Geotechnical and Geoenvironmental Engineering, ASCE* 138(11), 1357-1368, ISSN 1090-0241.

Rating: **excellent**

Grade: 1.7/2.

Years 2006-2010

Number of papers: 3.

Grade values: Excellent (1), Good (0.8), Acceptable (0.5), Limited (0).

[J07] **Mortara G. (2010).** A yield criterion for isotropic and cross-anisotropic cohesive-frictional materials. *International Journal for Numerical and Analytical Methods in Geomechanics* 34(9), 953-977, ISSN 0363-9061.

Rating: **excellent**

[J05] **Mortara G. (2008).** A new yield and failure criterion for geomaterials. *Géotechnique* 58(2), 125-132, ISSN 0016-8505.

Rating: **excellent**

[J04] **Mortara G., Mangiola A., Ghionna V.N. (2007).** Cyclic shear stress degradation and post-cyclic behaviour from sand-steel interface direct shear tests. *Canadian Geotechnical Journal* 44(7), 739-752, ISSN 1208-6010.

Rating: **excellent**

Grade: 3/3.

Stages in national and international research centres

- **CESI Ricerca S.p.A.** (October 2004). Implementation of an interface model in a 3D FEM code (CANT-SD).
- **Department of Engineering Science, University of Oxford** (February 2002 - June 2002; July 2003 - October 2003). Formulation of a constitutive model based on hyperplasticity
- **Laboratoire 3S, Université Joseph Fourier, Grenoble** (October 1999 - April 2000). Formulation of a constitutive model for the behaviour of interfaces under monotonic and cyclic conditions
- **Enel PIS, Milan** (April 1999 - October 1999). Implementation of an interface model in a 3D FEM code (CANT-SD).
- **ISMES S.p.A., Bergamo** (October 1998 - April 1999). Experimental activity with the constant normal stiffness direct shear apparatus.

Collaborations with universities and research institutes

- University of Oxford, UK (Paper [IC02]).
- University of Western Australia, Perth, Australia (Paper [J02]).
- Laboratoire 3S, Université Joseph Fourier, Grenoble, France (Papers [J02, J03]).
- Kiel University, Germany (Paper [IC06]).
- Politecnico di Torino, Italy (Papers [J04, KL01]).
- Politecnico di Milano, Italy (Paper [J10]).
- Università degli Studi di Milano Bicocca, Italy (Paper [NC02]).
- CESI Ricerca S.p.A., Milano, Italy (Paper [NC01]).

Editorial activity

Reviewer for the following **ISI** Journals

- Acta Geotechnica (ISSN 1861-1125)
- Canadian Geotechnical Journal (ISSN 1208-6010)
- Computers and Geotechnics (ISSN 0266-352X)
- Géotechnique (ISSN 0016-8505)
- Géotechnique Letters (ISSN 2049-825X)
- International Journal for Numerical and Analytical Methods in Geomechanics (ISSN 0363-9061)
- International Journal of Plasticity (ISSN 0749-6419)
- International Journal of Solids and Structures (ISSN 0020-7683)
- Soils and Foundations (ISSN 0038-0806)

Organization of conferences and seminars

- International Symposium **micro to MACRO mathematical modelling in soil mechanics**, Reggio Calabria (Italy), 29 May - 1 June 2018.
- Seminar on **Geomechanics: monotonic loading, large number of cycles and granular flows**, Reggio Calabria (Italy), 22 June 2016. Invited speakers: prof. Angelo Amorosi (Sapienza Università di Roma), prof. Guido Gottardi (Università di Bologna), prof. Claudio di Prisco (Politecnico di Milano), prof. Guy Houlsby (University of Oxford).
- **2008 Seismic Engineering Conference Commemorating the 1908 Messina and Reggio Calabria Earthquake**, Reggio Calabria (Italy), 8-11 July 2008.

Activity within PhD Programmes

- **Invited lectures** within the course **Constitutive modelling of geomaterials** for the *PhD Programme in Structural, Seismic and Geotechnical Engineering* of the Politecnico di Milano.
 - *Yield criteria for geomaterials* (20 July 2017).
 - *Single and multi-mechanism plasticity models* (20 July 2017);

- **Invited lecture** within the course **Sperimentazione e modellazione del comportamento idro-meccanico delle interfacce** for the *PhD School In Geotechnical Engineering* organized by the Geotechnical Engineering Italian Group.
 - *Comportamento di interfaccia tra terreni granulari e superfici strutturali: evidenze sperimentali e modellazione costitutiva* (20 September 2016);
- Lecture within the seminar **Geomechanics: monotonic loading, large number of cycles and granular flows**.
 - *An introduction to elastoplastic models for soils: single and multi surface approaches* (22 June 2016);
- **Invited lectures** within the course **Constitutive modelling of geomaterials** for the *PhD Programme in Structural, Seismic and Geotechnical Engineering* of the Politecnico di Milano.
 - *Nesting and multi-mechanism plasticity models* (24 July 2015);
 - *Yield criteria for geomaterials* (22 July 2015).
- Member of the **Examination board** for the PhD Programme in *Civil, Environmental and Safety Engineering* at the University Mediterranea of Reggio Calabria (Year XXXII).
- Member of the **board** of the *PhD Programme in Civil, Environmental and Safety Engineering* at the University Mediterranea of Reggio Calabria (Years XXIX, XXX, XXXI, XXXII).
- Member of the **board** of the *PhD Programme in Civil, Energy, Environment and Materials Engineering* at the University Mediterranea of Reggio Calabria (Year XXVIII).
- Member of the **board** of the *PhD Programme in Geotechnical Engineering and Materials Chemistry* at the University Mediterranea of Reggio Calabria (Years XXIV, XXV, XXVI and XXVII).
- Member of the **board** of the *PhD Programme in Geotechnical Engineering* at the University Mediterranea of Reggio Calabria (Years XXIV, XXV, XXII and XXIII).
- Member of the **Examination board** for the PhD Programme in *Geotechnical Engineering and Materials Chemistry* at the University Mediterranea of Reggio Calabria (Year XXII).
- Member of the **Examination board** for the PhD Programme in *Geotechnical Engineering* at the University of Catania (Year XIX).

Teaching

Teaching responsibilities

— **A.Y. 2016-2017 - A.Y. 2017-2018**

Course: **Geotechnics**. Degree in Civil and Environmental Engineering at the University Mediterranea of Reggio Calabria.

— **A.Y. 2012-2013 - A.Y. 2017-2018**

Course: **Foundations**. Master's Degree in Civil Engineering at the University Mediterranea of Reggio Calabria.

— **A.Y. 2002-2003 - A.Y. 2010-2011**

Course: **Foundations**. Master's Degree in Civil Engineering at the University Mediterranea of Reggio Calabria.

— **A.Y. 2005-2006 - A.Y. 2007-2008**

Course: **Slope Stability**. Master's Degree in Civil Engineering and in Environmental Engineering at the University Mediterranea of Reggio Calabria.

— **A.Y. 2003-2004**

Courses: **Geotechnics** and **Elements of Geotechnics**. Degree in Architecture at the University Mediterranea of Reggio Calabria.

Other information

Associations

- Member of the *International Society for Soil Mechanics and Geotechnical Engineering* (**ISSMGE**).
- Member of the *Italian Geotechnical Association* (**AGI**) .
- Member of the *Geotechnical Engineering National Group* (**GNIG**).
- Member of the board of the *Geotechnical Engineering National Group* (**GNIG**) (3 July 2012 - 24 June 2015).

Computer skills

- Operating systems: *GNU/Linux, Windows*.
- Programming and scripting languages: *Fortran, Octave/Matlab, Bash*.
- Scientific typesetting and presentation: *Latex, Beamer*.
- Plotting software: *Gnuplot*.
- Office: *LibreOffice (Calc, Writer), Microsoft (VBA, Excel, Word, Access, PowerPoint)*.

Languages

- **Italian**: mother tongue
- **English**: good
- **French**: intermediate