



Curriculum Vitae Vanessa Magnanimo

1. PERSONAL INFORMATION

Born on May 8th, 1976 - Italian citizen.

1.1 Education

PhD (2007) Solid and Structure Mechanics (ICAR08), Politecnico di Bari, IT.
Supervisors: Prof. A. Sollazzo, Dr. L. La Ragione.

MSc (2002) Ingegneria Edile, Politecnico di Bari, IT.

1.2 Employment

Since 2018 *Associate Professor*, MSM, U. Twente, NL.

2012-2018 *Assistant Professor*, Tenure Track, MSM, U. Twente, NL.

2010 – 2011 *Postdoc*, MSM, U. Twente, NL.

2009 – 2010 *Postdoc*, DICA., Politecnico di Bari, IT.

2007 – 2009 *Consultant* at PCSC srl.

1.4 Recent scientific visits

Nov 2017 Visiting scientist (invited by V. Richefeu) at *3SR Laboratory*, FR.

Jan-Feb 2017 Visiting scientist (funded by 4TU) at *Cornell University*, USA.

2. RESEARCH INTERESTS:

- Metamaterials for geomechanics.
- Micromechanics of soils: sands, clays in dry/unsaturated/saturated conditions.
- Constitutive modeling of granular materials: fabric, elasticity and rheology.
- Calibration & Validation of DEM for industrial applications.

2.1 Publications (Selection of 10):

To present: 24 papers in major international journals, 23 conference papers in peer-reviewed proceedings and 4 chapters in books:

1. H. Cheng, S. Luding, K. Saitoh, and **V. Magnanimo**, *Elastic wave propagation in dry granular media: effects of probing characteristics and stress history*, IJSS, in press (2019).
2. H. Cheng, S. Luding, N. Rivas, J. Harting and **V. Magnanimo**, *Hydro-micromechanical modeling of wave propagation in saturated granular crystals*, IJNAMG, **43**(5), 1115-1139 (2019).
3. A. Pagano, **V. Magnanimo**, T. Weinhart and A. Tarantino, *Exploring the micromechanics of non-active clays by way of virtual DEM experiments*, Géotechnique, in press (2019).
4. H. Cheng, T. Shuku, K. Thoeni, P. Tempone, S. Luding and **V. Magnanimo**, *An iterative Bayesian filtering framework for fast and automated calibration of DEM models*, CMAME, **350**, 268-294 (2019).
5. A. Pagano, A. Tarantino and **V. Magnanimo**, *A microscale-based model for small-strain stiffness in unsaturated granular geomaterials*, Géotechnique, doi.org/10.1680/jgeot.17.P.238 (2018).
6. H. Shi, R. Mohanty, S. Chakravarty, R. Cabiscol, M. Morgeneyer, H. Zetzener, J. Ooi, A. Kwade, S. Luding and **V. Magnanimo**, *Effect of Particle Size and Cohesion on Powders Yielding and Flow*, KONA (2018). Coordinating a research collaboration between 4 universities.
7. N. Kumar, **V. Magnanimo** and S. Luding, *Tuning the bulk properties of bidisperse granular mixtures by small amount of fines*, Powder Technology. **293**, 94–112 (2016).
8. K. Saitoh, **V. Magnanimo** and S. Luding, *A Master equation for the probability distribution functions of forces in soft particle packings*, Soft Matter, **11**, 1253-1258 (2015), **with cover page**.
9. L. La Ragione and **V. Magnanimo**, *Contact anisotropy and coordination number for a granular assembly: a comparison of DEM simulations and theory*, PRE, **85**, 031304 (2012).
10. **V. Magnanimo**, L. La Ragione, J.T. Jenkins, P. Wang and H.A. Makse, *Characterizing the shear and bulk moduli of an idealized granular material*, EPL, **81** 34006 (2008).

2.2 Keynote/invited presentations (selection of 5):

- 2019 Colloquium (invited by G. Musso) *Politecnico di Torino*, Torino, IT.
- 2018 Plenary (selected by scientific committee) at *Micro to MACRO mathematical modelling in soil mechanics*, Reggio Calabria, IT.
- 2017 Plenary (selected by AEMMG committee) at *Powders&Grains2017*, Montpellier, FR.
- 2016 Keynote (invited by C. Daraio) at *Euromech Colloquium 580: Strongly Nonlinear Dynamics and Acoustics of Granular Metamaterials*, INRIA, Grenoble, FR.
- 2015 Colloquium (invited by M. Sperl) at *DLR Koln*, DE.

3. TEACHING

- 2019 *Advanced Soil Mechanics*, Civil Engineering MSc, U. Twente, (5EC ~25 students)
 Since 2014 *GrondMechanica*, Civil Engineering BSc, U. Twente, (2.5EC ~90 students).
 Since 2013 *Mechanica*, Biomedical Engineering BSc, U. Twente. (5EC ~70 students).
 2014-2018 Senior Training Mentor for the *EU FP7-ITN T-MAPPP*: coordinator of the training program for 15 PhDs/postdoc and organizer of the biannual doctoral schools.
 Since 2011 within NL graduate program: *Soft and granular materials*; *Particle Technology* (organizer); *Nonlinear Material Mechanics*.

International graduate schools (invited):

- 2018 *Alert Geomaterials* school, Aussois, FR.
 2017 *E-CAM Workshop HPC Particle-based models*, Aalto University, Espoo, FI.
 2015 *From particles to granular flow*, Politecnico Milano, IT.

Since 2010: supervised 6 PhDs and visiting PhDs, 6 postdocs, 11 MSc and 10 BSc students.

4. VALORIZATION

4.1 Major grants and awards

- 2019 Review Commission IFPRI - International Fine Particle Research Institute (10 k€)
Linking particle information, microstructure and dry powder flows.
 2019: NWO Open Mind Grant 2018 (50 k€)
Soft Seismic Shields: engineering soils to protect buildings.
 2019-2023: SPP-DFG (3 years postdoc co-supervised U. Stuttgart and U. Twente)
Tailored acoustic cloaking in particulate systems with soft inclusions.
 2015-2018: International open tender granted by ENI SpA (240 k€)
ReGROUP: Rock physics and Geomechanical constraints for Overpressure
 2013-2018: EU FP7 - ITN (Total: ~ 4.0 Mln€; U. Twente ~ 700 k€).
T-MAPPP Training on Multiscale Analysis of multiPhase Particle Processes,
 U. Edinburgh (coordinator), 5 universities, 9 companies (incl. BASF, Nestlé, P&G).

4.2 Institutional responsibilities

- Since 2017: Coordinator interdepartmental *Center for Soft Metamaterials*.
 Since 2016: Chair *Female Faculty Network Twente* FFNT.

4.3 Commissions of trust

- Member *Géotechnique Advisory Panel* (2013-2015).
- Guest editor *Granular Matter* (2018-2019) and *Powder Technology* (2014-2015).
- Committee member *NWO Veni 2017*, scheme for prestigious personal grants, NL.
- Member *PhD committee*, at U. Edinburgh, LUAM, 3SRLab, Tu/Delft.

4.4 Organization of scientific meetings (selection)

- Workshop *Granular Matter Across Scales*, Lorentz Center 2019, NL.
- Session *Granular Materials from micro to macro*, Particles2015, ES.
- Session *Granular Materials*, EMMC2014, SW.

Enschede, July 2019

Vanessa Magnanimo



