

**INFORMAZIONI PERSONALI** Fabio Rollo**OCCUPAZIONE PER LA QUALE  
SI CONCORRE****TITOLO DI STUDIO**

Ricercatore a tempo determinato tipologia A  
PhD in Geotechnical Engineering

**ESPERIENZA  
PROFESSIONALE**

01/08/2022 - ongoing

**Post-doc research fellow**

Research activity: "Numerical modelling of tunnelling soil structure interaction in STAND project"  
Department of Structural and Geotechnical Engineering – Sapienza University of Rome

01/10/2021 – 31/12/2021

**Visiting Postdoctoral fellow**

Research activity: "Modelling landslide triggering and runout in natural slopes"  
Dept. of Civil and Environmental Engineering – Northwestern University, Evanston IL, USA

01/08/2020 – 31/07/2022

**Post-doc research fellow**

Research activity: "Evaluation of the seismic behaviour of earth dams"  
Department of Structural and Geotechnical Engineering – Sapienza University of Rome

01/06/2019 – 31/05/2020

**Post-doc research fellow**

Research activity: "Thermodynamic-based constitutive modelling of soils: from mathematical formulation to the analysis of slopes in seismic areas"  
Department of Structural and Geotechnical Engineering – Sapienza University of Rome

**ISTRUZIONE E FORMAZIONE**

11/2015 – 02/2019

**Doctor of Philosophy in Structural and Geotechnical Engineering**

Title of the thesis: "Elastic anisotropy and elastoplastic coupling of soils: a thermodynamic approach"  
Department of Structural and Geotechnical Engineering – Sapienza University of Rome  
Supervisor: Prof. Ing. Angelo Amorosi  
Final degree mark: Ottimo con lode – Excellent (with merit)  
Date of dissertation: 26/02/2019

11/2015 – 02/2019

**Master's degree in Civil Engineering (Geotechnical Engineering)**

Title of the thesis: "Geotechnical design of shaft foundations"  
Department of Structural and Geotechnical Engineering – Sapienza University of Rome  
Supervisor: Prof. Ing. Alberto Burghignoli  
Final degree mark: 110/110 e lode – (with merit)  
Date of dissertation: 28/01/2015

11/2015 – 02/2019

**Bachelor's degree in Civil Engineering**

Department of Structural and Geotechnical Engineering – Sapienza University of Rome  
Final degree mark: 108/110

## COMPETENZE PERSONALI

Lingua madre Italiano

Altre lingue

|  | COMPRESIONE |         | PARLATO     |                  | PRODUZIONE SCRITTA |
|--|-------------|---------|-------------|------------------|--------------------|
|  | Ascolto     | Lettura | Interazione | Produzione orale |                    |
| Inglese  | B2          | C1      | B2          | B2               | C1                 |
| Sostituire con il nome del certificato di lingua acquisito. Inserire il livello, se conosciuto |             |         |             |                  |                    |
| Francese   | B2          | B2      | B2          | B2               | B2                 |
| Sostituire con il nome del certificato di lingua acquisito. Inserire il livello, se conosciuto |             |         |             |                  |                    |

Livelli: A1/A2: Utente base - B1/B2: Utente intermedio - C1/C2: Utente avanzato  
[Quadro Comune Europeo di Riferimento delle Lingue](#)

## ULTERIORI INFORMAZIONI

Pubblicazioni su riviste internazionali

Rollo, F., & Amorosi, A. (2022). Isotropic and anisotropic elasto-plastic coupling in clays: a thermodynamic approach. *International Journal of Solids and Structures*, 111668. <https://doi.org/10.1016/j.ijsolstr.2022.111668>

Rollo F., Rampello S. (2021). Probabilistic assessment of seismic-induced slope displacements: an application in Italy. *Bull Earthquake Eng.* 19, 4261-4288. <https://doi.org/10.1007/s10518-021-01138-5>.

Amorosi, A., Rollo, F., & Dafalias, Y. F. (2021). Relating elastic and plastic fabric anisotropy of clays. *Géotechnique*, 71(7), 583-593. <https://doi.org/10.1680/jgeot.19.P.134>

Rollo F., Amorosi A. (2020). SANICLAY-T: Simple thermodynamic-based anisotropic plasticity model for clays. *Computers and Geotechnics*, 127,103770. <https://doi.org/10.1016/j.compgeo.2020.103770>.

Dafalias, Y. F., Taiebat, M., Rollo, F., & Amorosi, A. (2020). Convergence of rotational hardening with bounds in clay plasticity. *Géotechnique Letters*, 10(1), 16-19. <https://doi.org/10.1680/jgele.19.00012>.

Amorosi, A., Rollo, F. & Houlsby, G.T. (2020). A nonlinear anisotropic hyperelastic formulation for granular materials: comparison with existing models and validation. *Acta Geotech.* 15, 179-196. <https://doi.org/10.1007/s11440-019-00827-5>.

Houlsby, G. T., Amorosi, A., & Rollo, F. (2019). Non-linear anisotropic hyperelasticity for granular materials. *Computers and Geotechnics*, 115, 103167. <https://doi.org/10.1016/j.compgeo.2019.103167>

Pubblicazioni a convegni nazionali e internazionali

Rollo, F., Rampello, S. (2022). Probabilistic Seismic Hazard Curves and Maps for Italian Slopes. In: Wang, L., Zhang, JM., Wang, R. (eds) Proceedings of the 4th International Conference on Performance Based Design in Earthquake Geotechnical Engineering (Beijing 2022). PBD-IV 2022. Geotechnical, Geological and Earthquake Engineering, vol 52. Springer, Cham. [https://doi.org/10.1007/978-3-031-11898-2\\_116](https://doi.org/10.1007/978-3-031-11898-2_116)

Amorosi A., Rollo F., Dafalias Y.F. (2021) Evolving Elastic and Plastic Fabric Anisotropy in Granular Materials: Theoretical and Applied Implications. In: Barla M., Di Donna A., Sterpi D. (eds) Challenges and Innovations in Geomechanics. IACMAG 2021. Lecture Notes in Civil Engineering, vol 125. Springer, Cham. [https://doi.org/10.1007/978-3-030-64514-4\\_72](https://doi.org/10.1007/978-3-030-64514-4_72).

Rollo F., Amorosi A. (2021) Elasto-Plastic Coupling in Soils: A Thermodynamic-Based Approach. In: Barla M., Di Donna A., Sterpi D. (eds) Challenges and Innovations in Geomechanics. IACMAG 2021. Lecture Notes in Civil Engineering, vol 125. Springer, Cham. [https://doi.org/10.1007/978-3-030-64514-4\\_56](https://doi.org/10.1007/978-3-030-64514-4_56).

Amorosi A., Rollo F., Gagliardini L. (2020). The Analysis of Weak Rock Block Behaviour by an Advanced Constitutive Model. In: *Geotechnical Research for Land Protection and Development*. CNRIG 2019. Lecture Notes in Civil Engineering, vol 40, pp. 611-620. Springer, Cham. [https://doi.org/10.1007/978-3-030-21359-6\\_65](https://doi.org/10.1007/978-3-030-21359-6_65).

Amorosi A., Rollo F., Lilliu E., (2019) Seismic induced landslides in sand: a numerical approach, in: Silvestri & Moraci (Eds) *Earthquake Geotechnical Engineering for Protection and Development of Environment and Constructions – Vol. 4*, pp. 1114 - 1121 (7<sup>th</sup> ICEG) ISBN: 978-0-367-14328-2.

Amorosi A., Rollo F., Houlsby G.T., (2018) *A nonlinear hyperelastic anisotropic model for soils*, in: *Micro to MACRO Mathematical Modelling in Soil Mechanics, Trends in Mathematics* – pp. 11 - 22 ISBN: 978-3-319-99473-4

## Progetti finanziati

Project title: Modelling landslide triggering and runout in natural slopes  
Role: PI  
Sponsor: Sapienza University of Rome  
Award amount: 3.411,00€  
Award period: 2022

Project title: ReLUIS Working Package 16: Geotechnical Engineering Task Group 2: Slope stability  
Role: Component  
Sponsor: Italian Department of Civil Protection  
Award period: 2019 - 2023

Project title: Evaluation of the seismic behaviour of earth dams through advanced constitutive models  
Role: PI  
Sponsor: Sapienza University of Rome  
Award amount: 3.300,00€  
Award period: 2021

Project title: Constitutive modelling of the anisotropic behavior of soils  
Role: PI  
Sponsor: Sapienza University of Rome  
Award amount: 1.000,00€  
Award period: 2017

Project title: Modification of a constitutive model for the study of the seismic response of cohesionless soils  
Role: PI  
Sponsor: Sapienza University of Rome  
Award amount: 1.000,00€  
Award period: 2016

## Partecipazione come relatore a convegni internazionali e seminari

IACMAG 2022 – 16<sup>th</sup> International Conference for Comp. Methods and Advances in Geomechanics – Torino, Italy  
31 August – 2 September 2022  
Title: Elasto-plastic coupling in soils: a thermodynamic-based approach

IACMAG 2022 – 16<sup>th</sup> International Conference for Comp. Methods and Advances in Geomechanics – Torino, Italy  
31 August – 2 September 2022  
Title: Evolving elastic and plastic fabric anisotropy in granular materials: theoretical and applied implications

IV PBD – Conference on Performance based design in earthquake geotechnical engineering – Beijing, China  
15-17 July 2022 – online  
Title: Probabilistic seismic hazard curves and maps for Italian slopes

Invited seminar at Northwestern University, Evanston, IL (USA) – 17 November 2021  
Title: Modelling anisotropy and elasto-plastic coupling of clays: a thermodynamic perspective

Invited seminar at University of Tor Vergata, Roma, Italy – 22 July 2021  
Title: Anisotropia e accoppiamento elasto-plastico dei terreni: aspetti fenomenologici e modellazione su base termodinamica

Invited seminar at Politecnico di Milano, Milano, Italy – 24 June 2019  
Title: Elastic anisotropy and elasto-plastic coupling of soils: a thermodynamic approach

7ICEGE – 7<sup>th</sup> International Conference on Earthquake Geotechnical Engineering – Rome, Italy. 17-20 June 2019  
Title: Seismic-induced landslides in sand: a numerical approach

NUMGE 2018 – the 9<sup>th</sup> European Conference on Numerical Methods in Geotechnical Engineering – University of Porto, 25 to 27 June 2018.  
Title: *A modified bounding surface plasticity model for sand*

## Riconoscimenti e premi

Awarded a Special Mention for the “PhD theses award 2020” for the years 2017 – 2020. Sapienza University of Rome, 19 April 2022.

2022 – Reviewer for the “International Journal of Solid and Structures”  
2022 – Reviewer for the “International Journal for Numerical and Analytical Methods in Geomechanics”  
2021 – Reviewer for the Rivista Italiana di Geotecnica (RIG)  
2021 – Reviewer for the international journal “Bulletin of Earthquake Engineering”  
2019-2021 – Reviewer for the international journal “Géotechnique Letters”

Awarded as “Laureato Eccellente” for the faculty of Civil and Industrial Engineering for the academic year 2013-2014. Sapienza University of Rome, 23 April 2015

**Attività didattica** 2020 - ongoing - Adjunct Professor for the course "Geotechnical Studies of Territories" for the Faculty of Architecture – Sapienza University of Rome

2017 - ongoing - Teaching assistantship for the course "Slope stability" for the Faculty of Engineering – Sapienza University of Rome

**Dati personali** Autorizzo il trattamento dei miei dati personali ai sensi del Decreto Legislativo 30 giugno 2003, n. 196 "Codice in materia di protezione dei dati personali".

\_I\_ sottoscritt\_ dichiara di essere consapevole che il presente *curriculum vitae* sarà pubblicato sul sito istituzionale dell'Ateneo, nella Sezione "Amministrazione trasparente", nelle modalità e per la durata prevista dal d.lgs. n. 33/2013, art. 15.

Data 22/03/2023

f.to Fabio Rollo