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### Academics

2016: Award of the National Scientific Qualification from the Italian Ministry of Education, Universities and Research (MIUR) as Full Professor in Italian Universities for the disciplines 02/C1 – Astronomy, Astrophysics, Earth and Planetary Physics

2002: PhD in Geophysics and Volcanology at the University Federico II in Naples

1997: MSc degree in Physics at the University Federico II in Naples

### Current position

April 2019 - present: Docente di Ruolo di II Fascia (Associate Professor) at the Department of Physics 'E. Pancini' of the University Federico II in Naples

January 2005 - March 30, 2019: Assistant Professor at the Department of Physics 'E. Pancini' of the University Federico II in Naples

### Institutional Assignments

2009-2012: Member of the Science Faculty Council of the University Federico II in Naples

2016-2019: Member of the Council of the Polytechnic and Science School of the University Federico II in Naples

2009-2012 and 2015-2019: Member of the Executive Committee of the Department of Physics 'E. Pancini' of the University Federico II in Naples

2006-2012: Member of the board of the PhD course in Seismic Risk at the University Federico II in Naples

2006-2013: Member of the board of the PhD course in Geophysics at the University Alma Mater Studiorum in Bologna

2013 - present: Member of the board of the PhD course in Structural Engineering, Geotechnics and Seismic Risk at the University Federico II in Naples

### Main research topics

- Modeling of seismogenetic processes
- Analysis and inversion of strong motion data for the determination of kinematic characteristics of earthquakes source
- Modeling of seismic radiation produced by extended sources
- Moment tensor and focal mechanism
- Ground-Motion Prediction Equations
- Seismic hazard and scenario studies
- Ground Motion Prediction Equations
- Seismic Early-Warning
- Inverse problems and optimization techniques
- Seismic data analysis
- Seismic instruments

### Research projects, scientific responsibility

2016-present: Responsible of the Memorandum of Understanding between the Department of Physics 'E. Pancini' of the University Federico II in Naples and the Department of Earthquake Engineering, Tarbiat Modares University, Tehran, IRAN

2015-2018: Scientific responsible of three one-year deals between the Department of Physics 'E. Pancini' of the University Federico II in Naples and the Korean Institute for Geosciences and Mineral Resources di Daejeon (South Korea) concerning a feasibility study for seismic early-warning in South Korea

2015: Responsible of the research agreement between the Department of Physics 'E. Pancini' of the University Federico II in Naples and the Trimble Europe BV for the new generation seismic instrument testing

2011-2014: Task leader for the TASK 7.4 – Application to Schools – in the framework of the European Research project REAKT (Real time EArthquake risK reduCTion)

2008-2010: National coordinator of the research project S3 (Valutazione rapida dei parametri e degli effetti dei forti terremoti in Italia e nel Mediterraneo), in the framework of the agreement 2007-2009 between INGV and Civil Protection

2005-2007: Research Unit leader for the project S3 (Scenari di scuotimento e danno atteso in aree di interesse prioritario e/o strategico) – Agreement ProCiv-INGV 2004-06

### Research projects, participation & funding

1996-1998: GNDT - Predizione di forti movimenti del suolo in aree sismogenetiche campione a scala sub-regionale ed urbana

1996: CEE - The seismic cycle in Southern Chile: evolution and monitoring

1996: CEE - TomoVes experiment

1998-200: GNDT - Progetto Catania

2001-2003: GNDT - Sviluppo e confronto di metodologie per la valutazione della pericolosità sismica in aree sismogenetiche: applicazione all'Appennino centrale e meridionale

2002-2006: PON TECSAS – Tecnologie Esperte per il teleControllo e la teleSorveglianza dell'Ambiente costruito Strategico

2002-2006: PON SISMA – SIStema di Monitoraggio mArino

2002-2006: Rete Sismica Multicomponente – Regione Campania

2005-2008: RELUIS – REte dei Laboratori Universitari di Ingegneria Sismica – Linea di Ricerca 9: monitoraggio ed early-warning di strutture e infrastrutture strategiche

2008-2010: INGV-DPC V5 – Speed: Pericolosità connessa a terremoti pre-sin-eruttivi - Valutazione dell'hazard sismico e risposta di sito nelle aree vulcaniche Vesuvio e Campi Flegrei

2010-2014: UE - NERA project - UE progetto NERA: Network of European Research Infrastructures for Earthquake Risk Assessment and Mitigation

2010-2013: UE - GEYSERS project: Generalized Architecture for Dynamic Infrastructures Services

2011-2014: UE - REAKT: Real time EArthquake risK reduction

2015-2019: UE - EPOS-IP: European Plate Observing System

2017-2019: UE - SERA: Seismology and Earthquake Engineering Research Infrastructure Alliance for Europe

### Current teaching activity

From 2005, Professor of Metodi Inversi (Inverse methods) for the Master in Physics

From 2012, Professor of Fisica generale I (General Physics I) for the Bachelor in Chemistry

From 2017, Professor of 'Metodi inversi in geofisica applicata' for the master in Applied Geophysics at the Centro di Geotecnologie of the University of Siena, San Giovanni Valdarno (Arezzo, Italy)

From 2005, Teaching activity for the PhD program in Physics for the courses 'An introduction to the seismic source' e 'Principles of inverse theory'

From 2003, short courses on 'Inverse Methods' at the Department of Geophysics of the Charles University in Prague (Repubblica Ceca), Department of Geophysics of the University College of Dublin (Ireland), the Korean Institute of Geosciences and Mineral Resource (South Korea), Dipartimento di Scienze della Terra e Geoambientali of the University 'Aldo Moro' in Bari (Italy), Dipartimento di Matematica of the University of L'Aquila, .

#### Affiliations

Member of the American Geophysics Union (AGU), European Geosciences Union (EGU), and Gruppo Nazionale di Geofisica della Terra Solida (GNGTS)

#### Reviewing activity

Member of the Editorial Board of 'Datasets in Geosciences' ([www.datasets.com](http://www.datasets.com))

Referee for scientific journals: Annals of Geophysics, Bulletin of Earthquake Engineering, Bulletin of the Seismological Society of America, Geophysical Research Letters, Journal of Geophysical Research, Journal of Geophysics and Engineering, Journal of Seismology, Physics Earth Planetary Interior, Pure and Applied Geophysics, Tectonophysics.

Reviewer for the Grant Agency – Academy of Sciences of the Czech Republic and for the National Research Agency (CNCS) of Romania

Reviewer for the National Agency for the Evaluation of Universities and Research Institutes (ANVUR) for for the GEV 02 (Physics) and GEV 04 (Earth Sciences)

#### Publications

50+ Scientific articles, book chapters and conference proceedings

80+ Conference papers

1 Book on Seismology at university level

H-index (Scopus): 16

Total citations (Scopus): 757

H-index (Google Scholar): 20

Total citations (Google Scholar): 1073

#### PUBLICATIONS in INTERNATIONAL JOURNALS

1. Festa G., G.M. Adinolfi, A. Caruso, S. Colombelli, G. De Landro, L. Elia, A. Emolo, M. Picozzi, A. Scala, F. Carotenuto, S. Gammaldi, A. G. Iaccarino, S. Nazeri, R. Riccio, G. Russo, S. Tarantino and A. Zollo (2021). Insights into Mechanical Properties of the 1980 Irpinia Fault System from the Analysis of a Seismic Sequence. *Geosciences* 11, 28, doi: 10.3390/geosciences11010028.
2. Michele M., D. Latorre and A. Emolo (2019). An empirical formula to classify the quality of earthquake locations. *Bull. Seism. Soc. Am.* 109: 2755–2761, doi: 10.1785/0120190144.
3. Tarantino S., S. Colombelli, A. Emolo A. and A. Zollo (2019). Quick determination of the earthquake focal mechanism from the azimuthal variation of the initial P-wave amplitude. *Seism. Res. Lett.* 90: 1642–1649, doi: 10.1785/0220180290.
4. de Lorenzo S., M. Michele, A Emolo and A. Tallarico (2017). A 1D P-wave velocity model of the Gargano promontory (south-eastern Italy). *J. Seism.* 21: 909-919, doi: 10.1007/s10950-017-9643-7.

5. Convertito V., R. De Matteis and A. Emolo (2016). Investigating triggering of the aftershocks of the 2014 Napa earthquake. *Bull. Seism. Soc. Am.* 106: 2063-2070, doi: 10.1785/0120160011.
6. Emolo A., M. Picozzi, G. Festa, C. Martino, S. Colombelli, A. Caruso, L. Elia, A. Zollo, P. Brondi and N. Miranda (2016). Earthquake early warning feasibility in the Campania region (southern Italy) and demonstration for public school buildings. *Bull. Earthquake Eng.* 14: 2513-2529, doi: 10.1007/s10518-016-9865-z.
7. Brondi P., M. Picozzi, A. Emolo, A. Zollo and M. Mucciarelli (2015). Predicting the macroseismic intensity from early radiated P wave energy for on-site earthquake early warning in Italy. *J. Geophys. Res. – Solid Earth* 120, 7174-7189, doi: 10.1002/2015JB012367.
8. Emolo A., N. Sharma, G. Festa, A. Zollo, V. Convertito, J.-H. Park, H.-C. Chi and I.-S. Lim (2015). Ground motion prediction equations for South Korea peninsula. *Bull. Seism. Soc. Am.* 105, 2625-2640, doi: 10.1785/0120140296.
9. Picozzi M., A. Emolo, C. Martino, A. Zollo, N. Miranda, G. Verderame, T. Boxberger and the REAKT working group (2015). Earthquake early warning system for schools: a feasibility study in Southern Italy. *Seism. Res. Lett.* 86, 398-412, doi: 10.1785/0220140194.
10. Michele M., S. Custodio and A. Emolo (2014). Moment Tensor Resolution: Case Study of the Irpinia Seismic Network, Southern Italy. *Bull. Seism. Soc. Am.* 104, 1348–1357, doi: 10.1785/0120130177.
11. Grigoli F., S. Cesca, O. Amoroso, A. Emolo, A. Zollo and T. Dahm. (2014). Automated microseismic event location by waveform coherence analysis. *Geophys. J. Int* 196, 1742–1753, doi: 10.1093/gji/ggt477.
12. Colombelli S., A. Emolo and A. Zollo (2014). A duration magnitude scale for the Irpinia Seismic Network, Southern Italy. *Seism. Res. Lett.* 85 (1), 98-107, doi: 10.1785/0220130055.
13. Convertito V., F. Catalli and A. Emolo (2013). Combining stress transfer and source directivity: the case of 2012 Emilia seismic sequence. *Scientific Reports* 3, 3114, doi: 10.1038/srep03114.
14. Toraldo Serra E.M., B. Delouis, A. Emolo and A. Zollo (2013). Combining strong-motion, InSAR and GPS data to refine the fault geometry and source kinematics of the 2011, Mw 6.2, Christchurch earthquake (New Zealand). *Geophys. J. Int.* 194, 1760–1777, doi: 10.1093/gji/ggt186.
15. Toraldo Serra E.M., A. Emolo, A. Orefice and A. Zollo (2013). Earthquake source kinematics of moderate earthquakes from the inversion of apparent source time functions. *Geophys. J.*
16. Cultrera G., G. Ameri, A. Saraò, A. Cirella and A. Emolo (2013). Ground-motion simulations within ShakeMap methodology: application to the 2008 Iwate-Miyagi Nairiku (Japan) and 1980 Irpinia (Italy) earthquakes. Accepted for publication on *Geophys. J. Int.*, doi: 10.1093/gji/ggs074, in press.
17. Convertito V. and A. Emolo (2012). Investigating rupture direction for three 2012 moderate earthquakes in Northern Italy from the inversion of peak ground-motion parameters. Accepted for publication on *Bull. Seism. Soc. Am.*, 102: 2764-2770, doi: 10.1785/0120120067..
18. Lucca E., G. Festa and A. Emolo (2012). Kinematic inversion of strong motion data using a Gaussian parameterization for the slip: application to the 2008 Iwate-Miyagi, Japan, earthquake. Accepted for publication on *Bull. Seism. Soc. Am.*, 102: 2685-2703, doi: 10.1785/0120110292.
19. Chiauuzzi L., A. Masi, M. Mucciarelli, M. Vona, F. Pacor, G. Cultrera, F. Gallovič and A. Emolo (2012). Building damage scenarios based on exploitation of Housner intensity derived from finite faults ground motion simulations. *Bull. Earthquake Eng.* 10: 517-545, doi: 10.1007/s10518-011-9309-8.
20. Convertito V., M. Caccavale, R. De Matteis, A. Emolo, D. Wald and A. Zollo (2012). Fault extent estimation for near-real-time ground-shaking map computation purposes. *Bull. Seism. Soc. Am.* 102: 661-679, doi: 10.1785/0120100306.
21. Maercklin N., A. Zollo, A. Orefice, G. Festa, A. Emolo, R. De Matteis, B. Delouis and A. Bobbio (2011). The effectiveness of a distant accelerometer array to compute seismic source parameters: the April

- 2009 L'Aquila earthquake case history. *Bull. Seism. Soc. Am.* 101, 354–365, doi: 10.1785/0120100124.
22. Emolo A., V. Convertito and L. Cantore (2011). Ground-motion predictive equations for low-magnitude earthquakes in the Campania-Lucania area, Southern Italy. *J. Geophys. Eng.* 8, 46-60, doi: 10.1088/1742-2132/8/1/007.
  23. Ameri G., A. Emolo, F. Pacor, and F. Gallovič (2011). Ground-motion simulations for the 1980 M 6.9 Irpinia Earthquake (Southern Italy) and scenario events. *Bull. Seism. Soc. Am.* 101, 1136-1151, doi: 10.1785/0120100231.
  24. Iannaccone G., A. Zollo, L. Elia, V. Convertito, C. Satriano, C. Martino, G. Festa, M. Lancieri, A. Bobbio, T. A. Stabile, M. Vassallo and A. Emolo (2010). A prototype system for earthquake early-warning and alert management in southern Italy. *Bull. Earthquake Eng.* 8, 1105–1129, doi: 10.1007/s10518-009-9131-8.
  25. Cultrera G., F. Pacor, G. Franceschina, A. Emolo, and M. Cocco (2009). Directivity effects for moderate-magnitude earthquakes (Mw 5.6-6.0) during the 1997 Umbria-Marche sequence, Central Italy. *Tectonophysics* 476, 110-120, doi: 10.1016/j.tecto.2008.09.022.
  26. Ameri G., F. Gallovič, F. Pacor, and A. Emolo (2009). Uncertainties in strong round motion prediction with finite fault synthetic seismograms: an application to the 1984 M5.7 Gubbio, Central Italy, earthquake. *Bull. Seism. Soc. Am.* 99, 647-663, doi: 10.1785/0120080240.
  27. Zollo A., G. Iannaccone, M. Lancieri, L. Cantore, V. Convertito, A. Emolo, G. Festa, F. Gallovič, M. Vassallo, C. Martino, C. Satriano, and P. Gasparini (2009). Earthquake early warning system in southern Italy: methodologies and performance evaluation. *Geophys. Res. Lett.* 36, L00B07, doi: 10.1029/2008GL036689.
  28. Emolo A., G. Cultrera, G. Franceschina, F. Pacor, V. Convertito, M. Cocco, and A. Zollo (2008). Ground motion scenarios for the 1997 Colfiorito, Central Italy, earthquake. *Ann. Geophys.* 51 509-525.
  29. Convertito V., Emolo A. and A. Zollo (2006). Seismic hazard assessment for a characteristic earthquake scenario: an integrated probabilistic-deterministic method. *Bull. Seism. Soc. Am.* 96, 377-391, doi: 10.1785/0120050024.
  30. Emolo A. and A. Zollo (2005). Kinematic source parameters for the 1989 Loma Prieta earthquake from the non linear inversion of accelerograms. *Bull. Seism. Soc. Am.* 95, 981-994, doi: 10.1785/0120030193.
  31. Emolo A., G. Iannaccone, A. Zollo and A. Gorini (2004). Inferences on the source mechanism of the 1930 Irpinia (Southern Italy) earthquake from simulations of the kinematic rupture process. *Ann. Geophys.* 47, 1743-1754.
  32. Emolo A. and A. Zollo (2001). Accelerometric radiation simulation for the September 26, 1997 Umbria-Marche (Central Italy) main shocks. *Ann. Geofis.* 44, 605-617.
  33. Capuano P., A. Zollo, A. Emolo, S. Marucci and G. Milana (2000). Rupture mechanism and source parameters of Umbria-Marche main shocks from strong motion data. *J. Seism.* 4, 463-478, doi: 10.1023/A:1026523703464.
  34. Zollo A., A. Emolo, L. Improta and A. Herrero (1999). High frequency strong ground motion modelling in the Catania area associated with the Ibleo-Maltese fault system. *J. Seism.* 3, 279-288, doi: 10.1023/A:1009857730064.
  35. Zollo A., A. Bobbio, A. Emolo, A. Herrero and G. De Natale (1997). Modelling of the ground acceleration in the near source range: the case of 1976 Friuli earthquake (M=6.5), Northern Italy. *J. Seism.* 1, 305-319, doi: 10.1023/A:1009766214032.

36. Gasparini P. and the TomoVes Working Group (1997). Looking inside Mt. Vesuvius. EOS 79, 229, 230, 232.

#### PUBLICATIONS in ITALIAN JOURNALS

1. Franceschina G., A. Emolo, F. Gallovič e F. Pacor (2009). Modellazione dei meccanismi sismogenetici e ricostruzione del moto sismico di riferimento. Rivista italiana di geotecnica 3, 15 pp., ISSN: 0555-1405.

#### BOOKS

1. Zollo A. e A. Emolo. Terremoti ed onde: metodi e pratica della sismologia sperimentale. 440pp. Liguori Editore, Napoli. ISBN 9788820735852.

#### ARTICLES in SCIENTIFIC BOOKS

1. Zollo A., S. Colombelli, L. Elia, A. Emolo, G. Festa, G. Iannaccone, C. Martino and P. Gasparini (2012). An integrated regional and on-site Earthquake Early-Warning System for Southern Italy: concepts, methodologies and performances. In F. Wenzel and J. Zschau (Editors), Early warning for geological disasters, Springer-Verlag. In press.
2. Convertito V., R. De Matteis, L. Cantore, M. Caccavale, G. Iannaccone, A. Zollo e A. Emolo (2010). Gestione del post-evento sismico: mappe di scuotimento del suolo. In G. Iannaccone e A. Zollo (Editors), Metodi e tecnologie per l'early-warning sismico, DoppiaVoce Editore, pp. 281-316, ISBN: 0788889972205.
3. Iannaccone G., A. Zollo, A. Bobbio, L. Cantore, V. Convertito, M. Corciulo, M. Di Crosta, L. Elia, A. Emolo, G. Festa, I. Iervolino, M. Lancieri, C. Martino, C. Satriano, S. Sorrentino, T.A. Stabile and E. Weber (2010). A quick look to the earthquake early warning system under development in Southern Italy. In G. Iannaccone e A. Zollo (Editors), Metodi e tecnologie per l'early-warning sismico, DoppiaVoce Editore, pp. 381-432, ISBN: 0788889972205.
4. G. Iannaccone, A. Zollo, C. Satriano, C. Martino, L. Elia, M. Lancieri e A. Emolo (2010). Valutazione delle prestazioni del sistema di early warning. In G. Iannaccone e A. Zollo (Editors), Metodi e tecnologie per l'early-warning sismico, DoppiaVoce Editore, pp. 281-316, ISBN: 0788889972205.
5. Weber E., G. Iannaccone, A. Zollo, A. Bobbio, L. Cantore, M. Corciulo, V. Convertito, M. Di Crosta, L. Elia, A. Emolo, C. Martino, A. Romeo, and C. Satriano (2007). Development and testing of an advanced monitoring infrastructure (ISNet) for seismic early-warning applications in the Campania region of southern Italy. In P. Gasparini, G. Manfredi and J. Zschau (Editors), Earthquake early warning systems, Springer-Verlag, pp. 325-341, ISBN-13 978-3-540-72240-3.
6. Capuano P., G. Russo, T. Vanorio, R. Prevete, E. Auger, M. Bonagura, G. Caielli, V. Convertito, N. Damiano, L. D'Auria, A. Emolo, L. Lovisa, and M. Moretti (2006). 1984 Campi Flegrei seismic waveforms compilation. In A. Zollo, P. Capuano, and M. Corciulo (Editors), Geophysical exploration of the Campi Flegrei (Southern Italy) caldera's interiors: data, methods and results. DoppiaVoce Editore, pp.15-24, ISBN 10:88-89972-04-1; 13:978-88-89972-04-5.
7. Capuano P., A. Zollo, E. Auger, G. Caielli, C. Chiarabba, V. Convertito, L. D'Auria, R. de Franco, A. Emolo, S. Judenherc, L. Lovisa, J. Makris, A. Michelini, M. Moretti, E. Priolo, G. Russo, and J. Virieux (2006). Campi Flegrei active seismic experiments waveforms compilation. In A. Zollo, P. Capuano, and M. Corciulo (Editors),

Geophysical exploration of the Campi Flegrei (Southern Italy) Caldera's interiors: data, methods and results. DoppiaVoce Editore, pp.79-87, ISBN 10:88-89972-04-1; 13:978-88-89972-04-5.

8. Zollo A., G. Iannaccone, A. Emolo, M. Lancieri and E. Weber (2004). The Irpinia fault system as a natural laboratory for earthquake related studies. In M. Pecce, G. Manfredi and A. Zollo (Editors), The many facets of seismic risk, Università degli Studi di Napoli "Federico II" – CRdC AMRA, pp. 53-61, ISBN: ISBN-10: 88-89972-00-9.

9. Emolo A., A. Gorini, G. Iannaccone and A. Zollo (2004). Constraints on the source mechanism of the 1930 Irpinia (Southern Italy) earthquake from simulation of the kinematic rupture process. In M. Pecce, G. Manfredi and A. Zollo (Editors), The many facets of seismic risk, Università degli Studi di Napoli "Federico II" – CRdC AMRA, pp. 62-68, ISBN: ISBN-10: 88-89972-00-9.

10. Gorini A., A. Emolo, G. Iannaccone e A. Zollo (2002). Il terremoto irpino del 23 luglio 1930: modelli e simulazione della frattura sismica. In S. Castenetto e M. Sebastiano (a cura di), Il terremoto del Vulture – 23 luglio 1930 – VIII dell'Era Fascista, Istituto poligrafico e Zecca dello Stato, pp. 263-283.

11. Zollo A. and A. Emolo (2000). Modelling of ground acceleration field in the Catania area associated with the Ibleo-Maltese fault system. In E. Faccioli and V. Pessina (Editors), The Catania Project", CNR – Gruppo Nazionale per la Difesa dai Terremoti, pp. 84-89, ISBN:88-900449-0-X.