

Curriculum Vitae

INFORMAZIONI PERSONALI

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FORMAZIONE TITOLI

2000 – 2004 Post-doctoral Research Fellow, Geology, University of Palermo, Italy

1995 - 1999 – Ph.D., Geology, University of Naples “Federico II”, Naples, Italy

1989 - 1993 – Undergraduate and M.S. studies, Geology, University of Palermo, Italy

Title of Ph.D. Dissertation: “Kinematics of rifting processes in the northern Sicily passive continental margin using a new acquisition tool to perform high-resolution seismic profile”, Advisers: Raimondo Catalano (primary) and Giovanni Bertotti.

Title of M.S. Dissertation: "La spettrografia a microtremori. Uno strumento utile nelle indagini geologiche e/o sismologiche". Advisers: Maria Stella Giammarinaro (primary) and Raimondo Catalano.

Awards 2000 - “Young Scientifics’ Publication Award (Solid Earth Geophysics)” of the European Geophysical Society for his publication “Rifted margin formation in the South Tyrrhenian Sea: a high-resolution seismic profile across the North Sicily passive continental margin”.

ATTIVITA' DIDATTICA

I have given a number of courses in different disciplines and at different levels. Some of the most important are: Marine Geology, Oceanography, Basin Analysis and Field Geology.

RICERCHE FINANZIATE

I am currently involved in the following research projects:

Identification of relict sand deposits in the Sicily and Calabria offshore areas. Principal Investigator: Prof. Fabrizio Pepe;

Vulnerability of the Mekong Delta to flooding and pollution under the impact of climate change, tectonics and anthropo-genic activities, submitted for funding at the Ministry of Foreign Affairs and International Cooperation. Principal Investigator: Prof. Fabrizio Pepe;

PRIN 2017: “Overtime tectonic, dynamic and rheologic control on destructive multiple seismic events - Special Italian Faults & Earthquakes: from real 4D cases to models”. Scientific Leader of Research Unit Prof. Carmelo Monaco;

Earthquake Potential of Active Faults using offshore Geological and Morphological Indicators (EPAF), admitted to funding by the Ministry of Foreign Affairs and International Cooperation. Principal Investigator: Prof. Fabrizio Pepe

ASSOCIAZIONI SCIENTIFICHE

Member of the Italian Geological Society, 2006-Present

Member of European Geophysical Union, 2000-present

Member of American Geophysical Union, 2000-present

PUBBLICAZIONE

The main results of his work are being published in leading international Journals (see below):

Corradino, M., Pepe F., Bertotti G., Picotti V., Monaco C., Nicolich R. (2020). 3-D Architecture and Plio-Quaternary Evolution of the Paola Basin: Insights Into the Forearc of the Tyrrhenian-Ionian Subduction System. *Tectonics*, vol. 39, n. 2, e2019TC005898. doi:10.1029/2019TC005898.

Marco Sacchi, Salvatore Passaro, Flavia Molisso, Fabio Matano, Lena Steinmann, Volkhard Spiess, Fabrizio Pepe, Marta Corradino, Mauro Caccavale, Stella Tamburrino, Giuseppe Esposito, Mattia Vallefucio, Guido Ventura. The Holocene Marine Record of Unrest, Volcanism, and Hydrothermal Activity of Campi Flegrei and Somma–Vesuvius. *Vesuvius, Campi Flegrei, and Campanian Volcanism*, Elsevier, 2020, 435–69. doi:10.1016/B978-0-12-816454-9.00016-X.

Sacchi, Marco, Caccavale, Mauro, Corradino, Marta, Esposito, Giuseppe, Ferranti, Luigi, Hámori, Zoltán, Horváth †, Ferenc, Insinga, Donatella, Marino, Camilla, Matano, Fabio, Molisso, Flavia, Natale, Jacopo, Passaro, Salvatore, Pepe, Fabrizio, Tóth, Tamás (2019). The use and beauty of ultra-high-resolution seismic reflection imaging in Late Quaternary marine volcanoclastic settings, Bay of Naples, Italy. *FÖLDTANI KÖZLÖNY*, vol. 149, p. 371-394, ISSN: 0015-542X, doi: 10.23928/foldt.kozl.2019.149.4.371

Sacchi, Marco, et al. «A Roadmap for Amphibious Drilling at the Campi Flegrei Caldera: Insights from a MagellanPlus Workshop». *Scientific Drilling*, vol. 26, dicembre 2019, pagg. 29–46. www.sci-dril.net, doi:<https://doi.org/10.5194/sd-26-29-2019>.

Lo Presti, V., Antonioli, F., Palombo, M. R., Agnesi, V., Biolchi, S., Calcagnile, L., Di Patti, C., Donati, S., Furlani, S., Merizzi, J., Pepe, F., Quarta, G., Renda, P., Sulli, A., Tusa, S. (2019). Palaeogeographical evolution of the Egadi Islands (western Sicily, Italy). Implications for late Pleistocene and early Holocene sea crossings by humans and other mammals in the western Mediterranean. *EARTH-SCIENCE REVIEWS*, vol. 194, p. 160-181, ISSN: 0012-8252, doi: 10.1016/j.earscirev.2019.04.027

Ferranti L., Pepe F., Barreca G., Meccariello M., Monaco C. (2019). Multi-temporal tectonic evolution of Capo Granitola and Sciacca foreland transcurrent faults (Sicily channel). *TECTONOPHYSICS*, vol. 765, p. 187-204, ISSN: 0040-1951, doi: 10.1016/j.tecto.2019.05.002

De Ritis, R., Pepe, F., Orecchio, B., Casalbore, D., Bosman, A., Chiappini, M., Chiocci, F., Corradino, M., Nicolich, R., Martorelli, E., Monaco, C., Presti, D., Totaro, C. (2019). Magmatism Along Lateral Slab Edges: Insights From the Diamante Enotrio Ovidio Volcanic Intrusive Complex (Southern Tyrrhenian Sea). *TECTONICS*, vol. 38, ISSN: 0278-7407, doi: 10.1029/2019TC005533

Parrino N., Agosta F., Di Stefano P., Napoli G., Pepe F., Renda P. (2019). Fluid storage and migration properties of sheared Neptunian dykes. *MARINE AND PETROLEUM GEOLOGY*, vol. 102, p. 521-534, ISSN: 0264-8172, doi: 10.1016/

Pepe, F., Di Donato, V., Insinga, D., Molisso, F., Faraci, C., Sacchi, M., Dera, R., Ferranti, L., Passaro, S. (2018). Seismic stratigraphy of upper Quaternary shallow-water contourite drifts in the Gulf of Taranto (Ionian Sea, southern Italy). *MARINE GEOLOGY*, vol. 397, p. 79-92, ISSN: 0025-3227, doi: 10.1016/j.margeo.2017.12.004

Pepe, Fabrizio, Corradino, Marta, Parrino, Nicolò, Besio, Giovanni, Presti, Valeria Lo, Renda, Pietro, Calcagnile, Lucio, Quarta, Gianluca, Sulli, Attilio, Antonioli, Fabrizio (2018). Boulder coastal deposits at Favignana Island rocky coast (Sicily, Italy): Litho-structural and hydrodynamic control. *GEOMORPHOLOGY*, vol. 303, p. 191-209, ISSN: 0169-555X, doi: 10.1016/j.geomorph.2017.11.017

Barreca, Giovanni, Corradino, Marta, Monaco, Carmelo, Pepe, Fabrizio (2018). Active tectonics along the south east offshore margin of Mt. Etna: New insights from high-resolution seismic profiles. *GEOSCIENCES*, vol. 8, p. 1-16, ISSN: 2076-3263, doi: 10.3390/geosciences8020062

COSENTINO, Claudia, Molisso, F., SCOPELLITI, Giovanna, CARUSO, Antonio, Insinga, D., Lubritto, C., PEPE, Fabrizio, Sacchi, M. (2017). Benthic foraminifera as indicators of relative sea-level fluctuations: Paleoenvironmental and paleoclimatic reconstruction of a Holocene marine succession (Calabria, south-eastern Tyrrhenian Sea). *QUATERNARY INTERNATIONAL*, p. 79-101, ISSN: 1040-6182, doi:10.1016/j.quaint.2016.10.012

Cultrera, F., Barreca, G., Burrato, P., Ferranti, L., Monaco, C., Passaro, S., PEPE, Fabrizio, Scarfì, L. (2017). Active faulting and continental slope instability in the Gulf of Patti (Tyrrhenian side of NE Sicily, Italy): a field, marine and seismological joint analysis. *NATURAL HAZARDS*, vol. 86, p.253-272, ISSN: 0921-030X, doi: 10.1007/s11069-016-2547-y

Stocchi P., Antonioli F., Montagna P., Pepe F., Lo Presti V., Caruso A., Corradino M., Dardanelli G., Renda P., Frank N., Douville E., Thil F., de Boer B., Ruggieri R., Sciortino R., Pierre C. (2017). A stalactite record of four relative sea-level highstands during the Middle Pleistocene Transition. *QUATERNARY SCIENCE REVIEWS*, vol. 173, p. 92-100, ISSN: 0277-3791, doi: 10.1016/j.quascirev.2017.08.008

Loreto, M., PEPE, Fabrizio, De Ritis, R., Ventura, G., Ferrante, V., Speranza, F., Tomini, I., Sacchi, M. (2015). Geophysical investigation of Pleistocene volcanism and tectonics offshore Capo Vaticano (Calabria, southeastern Tyrrhenian Sea). *JOURNAL OF GEODYNAMICS*, vol. 90, p.71-86, ISSN: 0264-3707, doi: 10.1016/j.jog.2015.07.005

Barreca, G, Bruno, V, Cocorullo, C, Cultrera, F, Ferranti, L, Guglielmino, F, Guzzetta, L, Mattia, M, Monaco, C, PEPE, Fabrizio (2014). Geodetic and geological evidence of active tectonics in south-western Sicily (Italy). *JOURNAL OF GEODYNAMICS*, vol. 82, p. 138-149, ISSN: 0264-3707, doi: <http://dx.doi.org/10.1016/j.jog.2014.03.004>

Ferranti, L, Burrato, P, PEPE, Fabrizio, Santoro, E, Mazzella, M. E, Morelli, D, Passaro, S, Vannucci, G. (2014). An active oblique-contractional belt at the transition between the Southern Apennines and Calabrian Arc: The Amendolara Ridge, Ionian Sea, Italy. *TECTONICS*, vol. 33, p. 2169-2194, ISSN: 0278-7407, doi: 10.1002/2014TC003624

Sacchi, M, PEPE, Fabrizio, Corradino, Marta, Insinga, D. D, Molisso, F, Lubritto, C. (2014). The Neapolitan Yellow Tuff caldera offshore the Campi Flegrei: Stratal architecture and kinematic reconstruction during the last 15ky. *MARINE GEOLOGY*, vol. 354, p. 15-33, ISSN: 0025-3227, doi: <http://dx.doi.org/10.1016/j.margeo.2014.04.012>

PEPE, Fabrizio, Bertotti, G, Ferranti, L, Sacchi, M, Collura, A. M, Passaro, S, SULLI, Attilio (2014). Pattern and rate of post-20 ka vertical tectonic motion around the Capo Vaticano Promontory (W Calabria, Italy) based on offshore geomorphological indicators. *QUATERNARY INTERNATIONAL*, vol. 332, p. 85-98, ISSN: 1040-6182, doi: <http://dx.doi.org/10.1016/j.quaint.2013.11.012>

Barreca, G, Bruno, V, Cocorullo, C, Cultrera, F, Ferranti, L, Guglielmino, F, Guzzetta, L, Mattia, M, Monaco, C, PEPE, Fabrizio (2014). Geodetic and geological evidence of active tectonics in south-western Sicily (Italy). *JOURNAL OF GEODYNAMICS*, vol. 82, p. 138-149, ISSN: 0264-3707, doi: <http://dx.doi.org/10.1016/j.jog.2014.03.004>

Cosentino C., Pepe F., Scopelliti G., Calabrò M. and Caruso A. (2013). Benthic foraminiferal response to trace element pollution. The case study of the Gulf of Milazzo, NE Sicily (Central Mediterranean Sea). *Environmental Monitoring and Assessment*, 185, 8777–8802, DOI: 10.1007/s10661-013-3292-2.

Sulli A., Agate M., Mancuso M., Pepe F., Pennino V., Polizzi S., Lo Presti V., Gargano F., Interbartolo F. (2012). Variability of depositional setting along the north-western Sicily continental shelf (Italy) during Late Quaternary: effects of sea level changes and tectonic evolution. *Alpine and Mediterranean Quaternary*, 25 (2), 141 – 155.

Claudio Lo Iacono, Attilio Sulli, Mauro Agate, Valeria Lo Presti, Fabrizio Pepe, Raimondo Catalano. (2011) Submarine canyon morphologies in the Gulf of Palermo (Southern Tyrrhenian Sea) and possible implications for geohazards. *Mar. Geophys Res.* DOI 10.1007/s11001-011-9118-0

PEPE, Fabrizio, SULLI, Attilio, Bertotti, G, Cella, F. (2010). The architecture and Neogene to Recent evolution of the W Calabrian continental margin: an upper plate perspective to the Ionian subduction system (Central Mediterranean). *TECTONICS*, vol. 2009, ISSN: 0278-7407, doi:10.1029/2009TC002599

Pepe F., Giovanna Scopelliti, Rossella Di Leonardo, Gaetano Ferruzza (2010). Granulometry, mineralogy and trace elements of marine sediments from the Gulf of Milazzo (NE Sicily): evaluation of anthropogenic impact. *Italian Journal of Geosciences*, vol. 129; p. 385-394, ISSN: 2038-1719, doi: 10.3301/IJG.2010.23.

Ferranti, L, Oldow, J, D'argenio, B, Catalano, Raimondo, Lewis, D, Marsella, E, Avellone, Giuseppe, Maschio, L, Pappone, G, Pepe, Fabrizio, Sulli, Attilio (2008). Active deformation in Southern Italy, Sicily and southern Sardinia from GPS velocities of the Peri-Tyrrhenian Geodetic Array (PTGA). *Bollettino Della Società Geologica Italiana*, vol. 127, p. 299-316, ISSN: 0037-8763

Billi A, Barberi G, Faccenna C, Neri G, Pepe F, Sulli A (2006). Tectonics and seismicity of the Tindari fault system, southern Italy: crustal deformations at the transition between ongoing contractional and extensional domains located above the edge of a subducting slab. *TECTONICS*, vol. 25, p. 1-20, ISSN: 0278-7407, doi: 10.1029/2004TC001763

PEPE, Fabrizio, SULLI, Attilio, BERTOTTI, G, CATALANO, Raimondo (2005). Structural highs formation and their relationship to sedimentary basins in the north Sicily continental margin (southern Tyrrhenian Sea): implication for the Drepano Thrust Front. *TECTONOPHYSICS*, vol. 409/1-4, p. 1-18, ISSN: 0040-1951, doi: 10.1016/j.tecto.2005.05.009

PEPE, Fabrizio, BERTOTTI, G, CLOETINGH, S. (2004). Tectono-stratigraphic modelling of the north Sicily continental margin (southern Tyrrhenian sea). *TECTONOPHYSICS*, vol. 384/1-4, p. 257-273, ISSN: 0040-1951, doi: 10.1016/j.tecto.2004.04.002

PEPE, Fabrizio, SULLI, Attilio, AGATE, Mauro, Di Maio, D, Kok, A, Lo Iacono, C, Catalano, R. (2003). Plio-Pleistocene geological evolution of the northern Sicily continental margin (southern Tyrrhenian Sea): new insights from high-resolution, multi-electrode sparker profiles. *GEO-MARINE LETTERS*, vol. 23, p. 53-63, ISSN: 0276-0460, doi: DOI 10.1007/s00367-003-0124-3

PEPE, Fabrizio, Bertotti, G, Cella, F, Marsella, E. (2000). Rifted margin formation in the south Tyrrhenian Sea: A high-resolution seismic profile across the north Sicily passive continental margin. *TECTONICS*, vol. 19, p. 241-257, ISSN: 0278-7407, doi: 10.1029/1999TC900067

Agate M., Catalano R., Pepe F., Sulli A., Beranzoli L., Frugoni F., Braun T., Favali F., Smriglio G. (2000). The 1998 NW Sicily offshore earthquakes in the tectonic framework of the southern border of the Tyrrhenian sea. *Memorie della Società Geologica Italiana*, vol. 55, p. 103-114, issn: 0375-9857

Bertotti G., Marsella E., Pelosi N., Pepe F, Tonielli R. (1999). Sister 99: a seismic campaign to investigate the kinematics of south Tyrrhenian extensional regions. *Giornale di Geologia*, vol. 61, p. 25-36, issn: 0017-0291

GEOLOGICAL MAPS

Catalano R, Abate B, Agate M, Basilone L, Di Maggio C, Di Maio D, Mancuso M, Sulli A, Vaccaro F, Arnone M, Avellone G, Barchi M, Bonomo S, Cottone S, Dargenio A, Fallo L, Lo Cicero G, Lo Iacono C, Lucido M, Pepe F, Scannavino M, Sprovieri R (2006). Carta geologica d'Italia alla scala 1:50.000 del foglio 593 "Castellammare del Golfo". Progetto carg. p. 1;

Catalano R, Basilone L, Avellone G, Agate M, Sulli A, Barchi M, Bonomo S, Contino A, Di Maggio C, Di Maio D, Fallo L, Gasparo Morticelli M, Lena G, Lo Cicero G, Lucido M, Mancuso M, Pepe F, Scannavino M, Sprovieri R, Vaccaro F (2006). Carta Geologica d'Italia alla scala 1:50.000 del foglio 594 "Partinico". Progetto Carg. p. 1;

D'angelo S, Graziano R, Lembo P, Pantaleone N A, Sacchi L, Ventura G, Ventura R, Agate M, Buscemi N, Catalano R, Di Maio D, Di Stefano P, Lucido M, Mancuso M, Macaluso T, Pepe F, Sulli A (2005). Carta Geologica d'Italia a scala 1:50.000-foglio 604 "Isole Egadi". Progetto carg. p. 1;

Catalano R, Avellone G, Basilone L, Contino A, Grimaldi G, Lena G, Agate M, Di Maio D, Bonomo S, Balistreri G, Mancuso M, Di Maggio C, Abate B, Ferruzza G, Cannatella G, Arnone M, Gioe' C, Siragusano D, Gennaro C, Pepe F, Sulli A, Vaccaro F, Torre A, Torre F, Firrione P, Barchi M, Sprovieri R (2005). Carta Geologica d'Italia alla scala 1:50.000 del foglio 609 "Termini Imerese". progetto carg. p. 1;

Catalano R, Agate M, Di Maio D, Mancuso M, Pepe F, Scannavino M, Sulli A, Vaccaro F (2004). Note illustrative della Carta Geologica d'Italia alla scala 1:50.000 del foglio 609 "Termini Imerese" (settore marino). p. 1-30.

ATTIVITA' SCIENTIFICHE

Linking scales and disciplines is my favoured approach. My first research objective using an interdisciplinary and multi-scale approach was the reconstruction of the architecture and Late Neogene to Recent tectono-stratigraphic evolution of North Sicilian and Western Calabrian continental margins. The reconstruction of the pattern and rate of post-20 ka vertical tectonic motion based on offshore geomorphological indicators was at the centre of the work I carried out around the Capo Vaticano Promontory (W Calabria, Italy). I then moved to a) the offshore area between the Southern Apennines and Calabrian Arc, analyzing active deformation in a supposedly stable crustal sector; b) offshore south-western Sicily, analyzing active deformation in an area close to the macroseismic zone of destructive earthquake sequences; c) the Gulf of Patti and its onshore sector, which represents one of the most seismically active regions of the Italian Peninsula.

Current research projects focus on: 1) the development of an innovative method to identify the geometry of active offshore faults and calculate their average long-term slip rates; 2) the reconstruction of the fore-arc deformation of the Tyrrhenian Ionian Subduction System; 3) the identification of the relationships between tectonics and volcanism in the offshore western Calabria and Sicily Channel; 4) analysis of active deformation within the Neapolitan Yellow Tuff caldera, offshore the Campi Flegrei (Naples), using ultra-high-resolution 2D and 3D seismic data; 5) active tectonics of the coastal area along the southern Tyrrhenian Sea; 6) vulnerability of the Mekong Delta to flooding and pollution under the impact of climate change, tectonics and anthropogenic activities.

AMBITI DI RICERCA

Area of Interest: Marine geology, Tectonics, Basin analysis

Expertise

I am a **marine geologist** with wide experience in **quantitative tectonics** and **sedimentary basins analysis**. Since 1993 I have participated in numerous oceanographic cruises aimed at acquiring geological and geophysical data, in particular **high-resolution mono and multi-channel seismic reflection data**. It was during my first years as a researcher that I designed

and implemented a multi-channel seismic data acquisition system, which was widely used to acquire seismic data in the southern Tyrrhenian Sea. The ability to process and interpret high-resolution mono- and multi-channel seismic data was a further skill acquired during this period. I have also learned to use numerical models during periods spent at the Vrije Universiteit of Amsterdam. I like combining different geophysical and geological data acquired at the scale of basins with that of larger regions in order to link marine geology to a tectonic approach.

ALTRE ATTIVITA

STUDY AND RESEARCH STAYS

March 2011: Delft University of Technology, Delft; The Netherlands

March 2010: Delft University of Technology, Delft; The Netherlands

September 2008: Department of Earth Sciences, Vrije Universiteit, Amsterdam; The Netherlands

September - October 2004: Department of Earth Sciences, Vrije Universiteit, Amsterdam;

February - March 2001: Department of Earth Sciences, Vrije Universiteit, Amsterdam

August - September 2000: Department of Earth Sciences, Vrije Universiteit, Amsterdam;

September – October 1998: Department of Earth Sciences, Vrije Universiteit, Amsterdam;

January - March 1998: Department of Earth Sciences, Vrije Universiteit, Amsterdam;

August 2006 - Eotvos University, Department of Geophysics, Budapest, Hungary.