Emanuela Matrullo

25th April 1984, Napoli (Italy)

UMR 8538 – Laboratoire de Geologie
Ecole Normale Superieure
24 Rue Lhomond 75231 Paris (France)

+33 777782496 ; +39 3284181541
emanuelamatrullo@gmail.com ; matrullo@geologie.ens.fr

References

Prof. Aldo Zollo aldo.zollo@unina.it
Prof. Pascal Bernard bernard@ipgp.fr
Prof. Hélène Lyon-Caen Helene.Lyon-Caen@ens.fr
Prof. Luis Rivera luis.rivera@unistra.fr

Research experience

Oct 2012	*CNRS – Laboratoire de Geologie (Ecole Normale Superieur, Paris)*
Today	Post-Doc fellowship: "Source parameters of the seismicity of the Corinth Rift (Greece)" Project: REAKT - WP2 (http://www.reaktproject.eu)
Feb 2012	*AMRA s.c.ar.l. (Naples, Italy)*
Oct 2012	Fellowship: "Parameters of seismic source from the analysis of seismic waveforms acquired by a mobile network" Project: ReLUIS- GEISER
Gen 2011	*University "Federico II", Naples – Italy*
Dec 2011	Fellowship: "Method for the focal mechanisms determination and regional stress field analysis"
Sept 2009	*University "Federico II", Naples – Italy*
August 2010	Fellowship: "Method for the focal mechanisms determination and regional stress field analysis" Project: DPC-INGV_S5
April 2010	*Institute de Physic du Globe – EOST Strasbourg University*
July 2010	3 months fellowship "Marco Polo" of the University of Bologna "Stress inversion from initial polarities of a population of earthquakes." Supervisor: Prof. Luis Rivera
Oct 2008	*University "Federico II", Naples – Italy*
Sept 2009	Fellowship: "3D velocity models and probabilistic earthquake location on the Irpinia Test-sita" Project: DPC-INGV_S5 "Test sites for the multidisciplinary monitoring of detail"

Education

March 2012	*PhD in Geophysics,* University of Bologna, Italy "Fault delineation and stress orientations from the analysis of background, low magnitude seismicity in Southern Apennines (Italy)" Tutor: prof. Raffaella De Matteis Supervisor: Dr. Antonio Emolo – prof. Aldo Zollo
March 2008	*Master degree in Geophysics, Summa cum Laude* University Federico II, Naples, Italy "1D velocity models and probabilistic location with high-density seismic networks: an application to ISNet (Southern Italy)". Supervisor: prof. Aldo Zollo. Co-supervisor: Claudio Satriano
Oct 2005	*Bachelor Degree in Geological Science, Summa cum Laude* University Federico II, Naples, Italy "Preliminary study for the the urban area ofVolla(Na) seismic normative adaptation". Supervisor: prof. Concettina Nunziata

Teaching experience

2012	*Seismology@School (NERA project* - http://www.sismoscholar.it)
	Several scientific articles to broadcast the seismology in the middle and secondary school
2011- 2012	Math exercise at middle and secondary school (50 hours)
2009 -2011	*Universiy of Naples*
	Exercises and seminars for the classes of Seismology and Seismic Risk (prof. Aldo Zollo) on: seismic instruments and networks, signal analysis, earthquake location, earth structure from seismic data, seismic source modeling and earthquake early warning.

Training course

Febr 2013	*IPGP - Paris*
(18 hours)	Python and Obspy Short course
4-8 June 2012	*Seismology@school* – teachers workshop, Univ. of Naples
16 May 2011	*University of Napoli* - Lectures on "Time-dependent hazard analysis and operational earthquake forecasting
(3 hours)	Prof. Thomas H. Jordan (University of Southern California, Los Angeles)
April 2011	*University of Napoli* - Lectures on "Earthquake source mechanics"
(8 hours)	Prof. Raul Madariaga (Ecole Normale Superieure - Paris)
Nov 2010	*University of Napoli* - Computational Seismolgy Lectures "Seismic waves on
(12 hours)	heterogenous media"
	Prof. Jean Vireaux (University Joseph Fourier – Grenoble I)
8-9 October	*Coulomb 3.2 Short Course - Eucenter Pavia*
2010	Ross Stein (USGS), Volkan Sevilgen (USGS), Jian Lin (Woods Hole Oceanogrphic Institute)
April 2009	*University of Napoli – Short course* "Mediterranean Geodynamics"
(12 hours)	Prof. Claudio Faccenna- Prof. Massimo Mattei (Univ. Roma Tre)

Research interests

APPLIED SEISMOLOGY

Signal analysis	Seismic signal analysis. Refined first arrivals picking.
Data archiving	Databases for waveforms and metadata.
Earthquake location	Non-linear, probabilistic location; double difference location.
Structural modelling:	Building of velocity models from the integration of multi-parametric data. Fault delineation across refined earthquake location. Anelastic attenuation.
Earthquake source	Focal mechanisms and regional stress field determination; estimation of source parameters and determination of the scaling laws; local and moment magnitude determination

Technical Skills

COMPUTING	*Operating Systems:* Linux, Windows, Mac OS X, Solaris.
	Programming Languages: Bash, CSH, awk, C, Python, Obspy, Matlab, Fortran.
	Database: Access, SQlite.
	Plotting: GMT, Gnuplot Surfer, Adobe Illustrator, Adobe Photoshop.
LANGUAGES	Italian (mother tongue)
	English (good reading, writing and verbal skills)
	French (beginner).
OTHERS	Music (piano), travel, actively engaged in voluntary

Pubblications

1. **Matrullo E**., De Matteis R., Satriano C., Amoroso O., and Zollo A., (2013) An improved 1-D seismic velocity model for seismological studies in Campania-Lucania region (Southern Itay). Geophys. J. Int. (2013) doi: 10.1093/gji/ggt224

2. Emolo A., Amoroso O., Orefice A., **Matrullo E.,** Sharma N., Convertito V., Maercklin N., Zollo A., (2013) Analysis of induced seismicity at The Geysers Geothermal area, California. (submitted).

3. De Matteis R., **Matrullo E.,** Rivera L., Stabile T., Pasquale G., Zollo A., (2012). Fault Delineation and Regional Stress Direction from the Analysis of Background Microseismicity in the southern Apennines, Italy. BSSA (2012) August 2012 vol. 102 no. 4 1899-1907 doi: 10.1785/0120110225

4. **Matrullo E.** (2102), Fault delineation and stress orientations from the analysis of background, low magnitude seismicity in Southern Apennines (Italy). PhD thesis Univ. Bologna Alma Mater Studiorum

In preparation

1. **Matrullo E.,** Satriano C., Lyon-Caen H., Bernard P., Deschamps A. Scaling relashionship for source parameters of the seismicity of the Corith Rift Laboratory (Greece)

2. Boisellet A., **Matrullo E.,** Scotti O. and Lyon-Caen H. Testing the Gutenberg Richter law in the Corinth Rift using Mw>1.5 earthquakes

3. Kapetanidis V., Deschamps A., Bernard P., Lyon-Caen H., **Matrullo E.,** Karakonstantis A., Papadimitriou P., Voulgaris N., Anatomy of the 2013 microearthquake seismic swarm on Aigion fault (Greece).

4. Stabile T.A., De Landro G., Lomax A., **Matrullo E.,** Zollo A., Probabilistic Non-Linear Differential Location in 3D models: method and application to the Irpinia normal fault system (Southern Italy).

5. Emolo E., **Matrullo E.,** Pasquale G., Zollo A., New insights into geomechanical process in The Geysers Geothermal Field (California) from focal mechanisms and stress tensor estimation.

Conferences proceedings

June 2013 *SISCOR/CRL meeting 16-18 june 2013 Temeni (Greece)*
"Building a catalogue of seismic moment, corner frequencies and stress drops for the Corinth Rift seismicity" oral presentation
Matrullo E., Satriano C., Lyon-Caen H., Berard P., Deschamps A.

30-31 *GEISER Final Conference, Napoli*
May 2013 "Analysis of induced seismicityat The Geysers geothermal field, California" Orefice A., Emolo A., Maercklin N., **Matrullo E.**, Amoroso O., Convertito V., Sharma N., Zollo A., Festa G., Picozzi M.

April 2013 *EGU – European Geoscience Union - General Assembly Vienna*
"Scaling relashionship for source parameters of the seismicity of the Corith Rift (Greece)**" Matrullo E.**, Satriano C., Lyon-Caen H., Berard P., Deschamps A., Papadimitriou P., Sokos E., Plicka V.

March 2013 *NERA/ REAKT Workshop Zürich March 19-20 2013*
"**Scaling relashionship for source parameters of the seismicity of the Corith Rift (Greece)**" oral presentation
Matrullo E., Satriano C., Lyon-Caen H., Berard P., Deschamps A.

Dec 2012 *AGU fall meeting*
"Analysis of induced seismicity at The Geysers geothermal field, California" Emolo A., Maercklin N., Matrullo E., Orefice A., Amoroso O., Convertito V., Sharma N., Zollo A.

May 2012 *38th Workshop of the International School of Geophysics, EMFCSC, Erice (TP), Italy*
"Real time seismic monitoring and data analysis of the Campania-Lucania Apennines"
Stabile T. A., Amoroso O., De Matteis R., Emolo A., Festa G., Iannaccone G., Maercklin N., **Matrullo E**., Orefice A., Vassallo M., Zollo A.

May 2012 *38th Workshop of the International School of Geophysics, EMFCSC, Erice (TP), Italy*
"ISNet Network: distribution and access to the results of real-time data processing "
Orefice A., Amoroso O., Bobbio A., Colombelli S., Convertito V., De Matteis R., Del Gaudio S., Elia L., Emolo A., Festa G., Iannaccone G., Martino C., **Matrullo E.,** Sharma N., Stabile T. A., Toraldo E., Vassallo M., Zollo A.

Dec 2011 *AGU fall meeting* **"**Analysis of background microseismicity for crustalvelocity model, faultdelineation and regionalstressdirection in Southern Apennines, Italy**"** De Matteis R., Amoroso O., **Matrullo E.**, Stabile T.A., Rivera L.A. and Zollo A.

Nov 2011 *The Geiser Annual Meeting 2-4 November 2011 ETH-Zurich*
"From induced seismicity to direct seismic hazard"
Convertito V., Maercklin N., Sharma N., **Matrullo E.**, Emolo A. and Zollo A.

April 2011 *EGU – European Geoscience Union - General Assembly Vienna*
"Stress inversion from initial polarities of a population of earthquakes: application to the Irpinia region (Southern Apennines)**"**
Matrullo E., Rivera L., De Matteis R., and Zollo A.

April 2011 *EGU – European Geoscience Uninion - General Assembly Vienna*
"1D versus 3D velocity models for earthquake locations: a case study in Campania-Lucania region (Southern Italy)**"**
Matrullo E., Amoroso O., De Matteis R., Satriano C., and Zollo A.

April 2011 *EGU – European Geoscience Uninion - General Assembly Vienna*
"From induced seismicity to direct time-dependent seismic hazard**"**
Convertito V., Maercklin N., Sharma N., **Matrullo E.**, Caccavale M., Orefice A., and Zollo A.

July 2010 *Final Meeting of the Seismological Projects in the framework of Agreement INGV-DPC 2007-2009, Rome, ISPRA conference room*
"Velocity models and refined estimates of micro-earthquake source parameters for the Irpinia region, Southern Italy"
Stabile T., Amoroso O., De Matteis R., Maercklin N., **Matrullo E.**, Orefice A., Pasquale G., Satriano C., Zollo A.

October 2009 *Annual Meeting of the Seismological Projects in the framework of Agreement INGV-DPC 2007-2009, Rome*
"Building 1D reference velocity model of the Irpinia region (Southern Appennines): microearthquake locations and focal mechanisms"
Matrullo E., Pasquale G., Satriano C., De Matteis R., Zollo A..

October 2009 *Annual Meeting of the Seismological Projects in the framework of Agreement INGV-DPC 2007-2009, Rome*
"RU S5/6 DSF-UniNa: Research activities in the frame of the S5 Project"
Zollo A., Festa G., Maercklin N., Satriano C., Amoroso O., Bobbio A., Iannaccone G., **Matrullo E.**, Orefice A., Stabile T.A., Vassallo M..