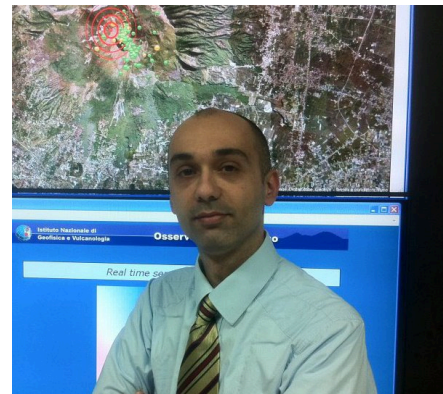


Curriculum vitae Luca D'Auria PhD

Personal data

First name	Luca
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Curriculum Studiorum

- 2003: **PhD in Geophysics**, *Università di Bologna*. Thesis: "Non-linear inversion of seismic traveltimes: methods and applications to Neapolitan volcanoes" (tutor Aldo Zollo PhD)
- 1999: **MSc in Geology**, *Università di Napoli "Federico II"*. Thesis: "Tomographic imaging of Somma-Vesuvius by non-linear inversion of traveltimes". final mark 110/110 cum laude (tutor Aldo Zollo PhD)

Research interests

- **Volcano Seismology**: Study of seismo-volcanic sources. Analysis of the stress field through the inversion of focal mechanisms. Seismic monitoring of active volcanoes and geothermal areas. Seismicity of Mt. Vesuvius, Campi Flegrei caldera and Stromboli Island. Numerical modelling of seismic and acoustic wave propagation in volcanoes.
- **Physical Volcanology**: Ground deformation modelling in volcanic and geothermal areas. Relationship between magma chamber and volcanic conduit dynamics with seismic signals and ground deformation. Multidisciplinary analysis of geophysical and geochemical signals on volcanic environments.
- **Inverse methods**: Non-linear bayesian geophysical inverse problems. Inversion of focal mechanisms, ground deformation data, seismic traveltimes.
- **Other**: Development of techniques for the automatic analysis of seismic signals recorded on volcanoes. Automatic data mining of social networks for seismological studies.

Professional experiences

- **2014-2016:** Responsible of the Monitoring Center of INGV-Naples (Osservatorio Vesuviano) with the duty of coordinating Seismology (Seismic catalogue and Seismic hazard laboratories), Geodesy (GPS, Tiltmeter, SAR, Gravity and Tide gauge data analysis laboratories), Cartography and GIS laboratory, the Monitoring Room (with coordination of 24h surveillance personnel and visualization systems), editing of daily, weekly, monthly and yearly bulletins of Neapolitan Volcanoes (Vesuvius, Campi Flegrei, Ischia) and Stromboli Island.
- **2014-2016:** Reference person for the Volcano Monitoring Networks of INGV.
- **2008-2016:** Permanent position as Researcher at INGV-Naples (Osservatorio Vesuviano)
- **2006-2014:** Responsible of the Seismology Lab. of INGV-Naples (Osservatorio Vesuviano) with the duty of ensuring the quality of the seismic catalogue and editing the seismological bulletins.
- **2003-2008:** Temporary position as Researcher at INGV-Naples (Osservatorio Vesuviano)

Selected recent publications

- **L. D'Auria** and V. Convertito (2015). *Real-Time Mapping of Earthquake Perception Areas in the Italian Region from Twitter Streams Analysis*. in S. D'Amico (ed.), *Earthquakes and Their Impact on Society*, Springer Natural Hazards, DOI 10.1007/978-3-319-21753-6_26
- **L. D'Auria** et al., (2015). *Magma injection beneath the urban area of Naples: a new mechanism for the 2012–2013 volcanic unrest at Campi Flegrei caldera*. *Sc. Rep.* vol.5 doi: 10.1038/srep13100
- **L. D'Auria** and B. Massa (2015). *Stress Inversion of Focal Mechanism Data Using a Bayesian Approach: A Novel Formulation of the Right Trihedra Method*. *Seism. Res. Lett.* Vol. 86 n.3 doi: 10.1785/0220140153
- G. Chiodini, J. Vandemeulebrouck, S. Caliro, **L. D'Auria**, P. De Martino, A. Mangiacapra and Z. Petrillo (2015). *Evidence of thermal-driven processes triggering the 2005–2014 unrest at Campi Flegrei caldera*. *EPSL* vol.414 pp. 58-67 doi: 10.1016/j.epsl.2015.01.012
- M.R. Burton, G.G. Salerno, **L. D'Auria**, T. Caltabiano, F. Murè and R. Maugeri (2015). *SO₂ flux monitoring at Stromboli with the new permanent INGV SO₂ camera system: A comparison with the FLAME network and seismological data*. *J. Volc. Geoth. Res.* Vol. 300 pp.95-102 doi: 10.1016/j.jvolgeores.2015.02.006
- E. Marotta, S. Calvari, A. Cristaldi, **L. D'Auria**, M.A. Di Vito et al. (2015). *Reactivation of Stromboli's summit craters at the end of the 2007 effusive eruption detected by thermal surveys and seismicity*. *J. Geophys. Res. Solid Earth*, 120, 7376–7395, doi:10.1002/2015JB012288.
- **L. D'Auria**, B. Massa, E. Cristiano, C. Del Gaudio, F. Giudicepietro, G. Ricciardi and C. Ricco (2014). *Retrieving the Stress Field Within the Campi Flegrei Caldera (Southern Italy) Through an Integrated Geodetical and Seismological Approach*. *Pure Appl. Geoph.* doi: 10.1007/s00024-014-1004-7
- L. Pappalardo, **L. D'Auria**, A. Cavallo and S. Fiore (2014). *Petrological and seismic precursors of the paroxysmal phase of the last Vesuvius eruption on March 1944*. *Sc. Rep.* vol. 4 doi: 10.1038/srep06297
- G. Macedonio, F. Giudicepietro, **L. D'Auria** and M. Martini (2014). *Sill intrusion as a source mechanism of unrest at volcanic calderas*. *J. Geoph. Res.* 119, doi: 10.1002/2013JB010868.
- **L. D'Auria**, B. Massa and A. De Matteo (2014). *The stress field beneath a quiescent stratovolcano: The case of Mt. Vesuvius*. *J. Geoph. Res.* 119, doi: 10.1002/2013JB010792.
- A.M. Esposito, **L. D'Auria**, F. Giudicepietro, T. Caputo, M. Martini (2013). *Neural analysis of seismic data: applications to the monitoring of Mt. Vesuvius*, *Annals of*

Geophysics Special Issue “Mt. Vesuvius monitoring: the state of the art and perspectives” vol.56 n.4

- **L. D’Auria**, A.M. Esposito, D. Lo Bascio, P. Ricciolino, F. Giudicepietro, M. Martini, T. Caputo, W. De Cesare, M. Orazi, R. Peluso, G. Scarpato, C. Buonocunto, M. Capello, A. Caputo (2013). *The recent seismicity of Mt. Vesuvius: perspectives for future seismological monitoring systems*, Annals of Geophysics special issue “Mt. Vesuvius monitoring: the state of the art and perspectives” vol.56 n.4.
- Orazi M., **D’Auria L.**, Tramelli A., Buonocunto C., Capello M., Caputo A., De Cesare W., Giudicepietro F., Martini M., Peluso R., Scarpato G. (2013). *The seismic monitoring network of Mt. Vesuvius*, Annals of Geophysics special issue “Mt. Vesuvius monitoring: the state of the art and perspectives” vol.56 n.4.
- **D’Auria L.**, F. Giudicepietro, M. Martini, R. Lanari - 4D imaging of the source of ground deformation at Campi Flegrei caldera (Southern Italy) *J. Geoph. Res.* VOL.117, B08209, doi: 10.1029/2012JB009181
- Esposito, A.M. **D’Auria L.**, Giudicepietro F., Peluso R., Martini M. - Automatic Recognition of Landslides Based on Neural Network Analysis of Seismic Signals: An Application to the Monitoring of Stromboli Volcano (Southern Italy). PAGEOPH DOI 10.1007/s00024-012-0614-1
- Priolo E., L. Lovisa, A. Zollo, G. Bohm, **L. D’Auria**, S. Gautier, F. Gentile, P. Klinc, D. Latorre, A. Michelini, T. Vanorio, and J. Virieux (2012). *The Campi Flegrei Blind Test: Evaluating the Imaging Capability of Local Earthquake Tomography in a Volcanic Area*, International Journal of Geophysics Volume 2012, doi:10.1155/2012/505286
- **D’Auria L.**, Giudicepietro F., Aquino I., Borriello G., Del Gaudio C., Lo Bascio D., Martini M., Ricciardi G.P., Ricciolino P., Ricco C. (2011). Repeated fluid-transfer episodes as a mechanism for the recent dynamics of Campi Flegrei caldera (1989-2010). *J. Geoph. Res.* VOL. 116, B04313, doi:10.1029/2010JB007837
- **D’Auria L.**, F. Giudicepietro, M. Martini, M. Orazi, R. Peluso, G. Scarpato (2010). Polarization analysis in the Discrete Wavelet Domain: An Application to Volcano Seismology. *Bulletin of the Seismol. Soc. of Am.*, 100 (No. 2), 670-683, April 2010, doi: 10.1785/0120090166.
- Flora Giudicepietro, Massimo Orazi, Giovanni Scarpato, Rosario Peluso, **Luca D’Auria** et al., (2010) Seismological Monitoring of Mount Vesuvius (Italy): More than a Century of Observations. *Seismological Research Letters* July/August 2010 v.81 no.4 p.625-634 doi: 10.1785/gssrl.81.4.625
- Buontempo S., **L. D’Auria**, G. De Lellis, G. Festa, P. Gasparini, G. Iacobucci, A. Marotta, M. Martini, G. Miele, P. Migliozzi, O. Pisanti, P. Strolin, M. Vassallo, and A. Zollo (2010). Perspectives for the radiography of Mt. Vesuvius by cosmic ray muons, *Earth Planets Space*, 62 (No. 2), 131-137, doi:10.5047/eps.2009.05.005
- F. Beauducel, A. Bross, S. Buontempo, **L. D’Auria** et al. (2010) - The MU-RAY project: Summary of the round-table discussions. *Earth Planets Space*, Vol. 62 (No. 2), pp. 145-151, doi:10.5047/eps.2009.03.004
- Robin S. Matoza, Milton A. Garces, Bernard A. Chouet, **Luca D’Auria**, Michael A. H. Hedlin, Catherine De Groot-Hedlin and Gregory P. Waite (2009) - The source of infrasound associated with long-period events at Mount St. Helens, *J. Geoph. Res.* 114, doi:10.1029/2008JB006128.
- **L. D’Auria**, M. Martini (2009) - Slug flow: modeling in a conduit and associated elastic radiation, *Encyclopedia of Complexity and System Science*, “Complexity in Earthquakes, Tsunamis, and Volcanoes, and Forecast and Warning”, 00339, 485/485, Ed. R. Meyer, Springer, 1 edition (June 2009).
- Walter De Cesare, Massimo Orazi, Rosario Peluso, Giovanni Scarpato, Antonio Caputo,

Luca D'Auria et al., (2009) The Broadband Seismic Network of Stromboli Volcano, Italy. *Seismological Research Letters* May/June 2009 v.80 no.3 p.435-439 doi:10.1785/gssrl.80.3.435

- Bottiglieri M., C. Godano, **L. D'Auria** (2009). Distribution of volcanic earthquake recurrence intervals, *J. Geophys. Res.*, 114, B10309, doi:10.1029/2008JB005942.
- F. Giudicepietro, **L. D'Auria**, M. Martini, T. Caputo, R. Peluso, W. De Cesare, M. Orazi, G. Scarpato (2008) - Changes in the VLP seismic source during the 2007 Stromboli eruption, *Journal of Volcanology and Geothermal Research*, 182 (2009), 162-171, doi:10.1016/j.jvolgeores.2008.11.008.
- M. Esposito, F. Giudicepietro, **L. D'Auria**, S. Scarpetta, M. Martini, M. Coltelli, M. Marinari (2008) - Unsupervised Neural Analysis of Very Long Period events at Stromboli volcano using the Self-Organizing Maps, *Bull Seismol. Soc. Am.* Vol. 98, No. 5, pp. 2449-2459, October 2008, doi: 10.1785/0120070110.

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- ORCID: <http://orcid.org/0000-0002-7664-2216>

Recent International Meeting Presentations

- EGU 2016, Vienna, Austria.
 - Bruno Massa, **Luca D'Auria**, Elena Cristiano, and Ada De Matteo. Multiscale stress field inversion in the crust from focal mechanism datasets.
 - **Luca D'Auria**, Jose Fernandez, Giuseppe Puglisi, Eleonora Rivalta, Antonio Camacho, Mehdi Nikkhoo and Thomas Walter. A Blind Test Experiment in Volcano Geodesy: a Benchmark for Inverse Methods of Ground Deformation and Gravity Data.
 - Flora Giudicepietro, Giovanni Macedonio, **Luca D'Auria**, and Marcello Martini. Insight into vent opening probability in volcanic calderas.
 - P. Mazzetti et al., The MED-SUV Multidisciplinary Interoperability Infrastructure.
 - G. Puglisi, **D'Auria L**, Reitano D , Sangianantoni A, Scarpato G, Spampinato L, Mazzetti P, Nativi S, Papeschi F, Pepe A, Brito F, Caumont H, Fernandez José, Mathieu P.P. The implementation of the Open Access paradigm to the EC-FP7 MED-SUV (Mediterranean Supersite Volcanoes) project.
 - R Carbonari, R. Di Maio, **L. D'Auria**, Z. Petrillo. Magnetotellurics as a multiscale geophysical exploration method.
 - P. Tizzani, R. Castaldo, **L. D'Auria**, S. Pepe, G. Solaro. Definition of Brittle Ductile Transition of the upper crust beneath the Campi Flegrei-Ischia Volcanic District and its impact on natural seismicity
- IUGG 2015, Prague, Czech Republic.
 - **L. D'Auria**, S. Pepe, R. Castaldo, F. Giudicepietro, G. Macedonio, P. Tizzani, F. Casu, R. Lanari, M. Manzo, E. Sansosti, I. Zinno.
 - G. Macedonio, **L. D'Auria**, F. Giudicepietro, M. Ma. Intrusion of a magmatic sill beneath Campi Flegrei caldera (Southern Italy) 2012-2013 rtini. A sill intrusion model applied to volcanic calderas.
- Fringe Workshop, Frascati, Italy.
 - **D'Auria L.**, Pepe S., Castaldo R., Zinno I., Macedonio G., Giudicepietro F., Casu F., Manzo. M, Sansosti E., Lanari R., and Tizzani P. Imaging the episodic growth of a magmatic reservoir beneath the megacity of Naples.

- Pepe S., R. Castaldo, F. Casu, **L. D'Auria**, C. De Luca, E. Sansosti, G. Solaro, P. Tizzani, G. Zeni . Analysis of unrest episodes in the last decade at Mauna Loa volcano through the use of multi-temporal and multi-platform InSAR data.
- EGU 2015, Vienna, Austria.
 - **Luca D'Auria**, Susi Pepe, Raffaele Castaldo, Flora Giudicepietro, Giovanni Macedonio, Francesco Casu, Riccardo Lanari, Mariarosaria Manzo, Eugenio Sansosti, Ivana Zinno, and Pietro Tizzani. Imaging the intrusion of a magmatic sill beneath the town of Pozzuoli (2012-2013). Geophysical Research Abstracts Vol. 17, EGU2015-4920, 2015
 - Giovanni Macedonio, Flora Giudicepietro, **Luca D'Auria**, and Marcello Martini. Modeling sill intrusion in volcanic calderas. Geophysical Research Abstracts Vol. 17, EGU2015-8112, 2015
 - Ada De Matteo, Raffaele Castaldo, **Luca D'Auria**, Michael Jame, Steve Lane, Bruno Massa, Susi Pepe, and Pietro Tizzani. Analogue Models Of Volcanic Spreading At Mt. Vesuvius. Geophysical Research Abstracts Vol. 17, EGU2015-397-1, 2015
- EGU 2014, Vienna, Austria.
 - **Luca D'Auria**, Bruno Massa and Ada De Matteo. The stress field beneath Mt. Vesuvius (Southern Italy). Geophysical Research Abstracts Vol. 16, EGU2014-6414, 2014
 - **Luca D'Auria**, Vincenzo Convertito, and Flora Giudicepietro. Real-time mapping of earthquake perception areas in the Italian region from Twitter streams analysis. Geophysical Research Abstracts Vol. 16, EGU2014-6236, 2014
 - Elena Cristiano, **Luca D'Auria**, Bruno Massa, Carlo Del Gaudio, Flora Giudicepietro, Giovanni Ricciardi and Ciro Ricco. The stress field in Campi Flegrei caldera by joint inversion of seismological and ground deformation data. Geophysical Research Abstracts Vol. 16, EGU2014-5530, 2014
 - Luciano Nocerino, **Luca D'Auria**, Flora Giudicepietro, and Marcello Martini. Constrained inversion of seismo-volcanic events. Geophysical Research Abstracts Vol. 16, EGU2014-5565, 2014
 - Zaccaria Petrillo, **Luca D'Auria**, Annarita Mangiacapra, Giovanni Chiodini, and Stefano Caliro. A perturbative approach for the modelling of short-term fluid-driven ground deformation episodes on volcanoes: the case of Campi Flegrei caldera (Italy). Geophysical Research Abstracts Vol. 16, EGU2014-12431, 2014
 - Agata Siniscalchi, Michela Carlucci, **Luca D'Auria**, Giuseppe Nichilo, Zaccaria Petrillo and Gerardo Romano. 3D resistivity model of the Solfatara crater by AudioMT data. Geophysical Research Abstracts Vol. 16, EGU2014-9513, 2014

Selected research project

- 2015-2016: Responsible of task 11.4 (Volcanological data) of EPOS-IP (<http://www.epos-eu.org>)
- 2014-2016: Krafla Magma Drilling Project (KMDP) (<http://www.icdp-online.org/projects/world/europe/krafla/details>)
- 2014-2016: Leader of WP3 (Data Sharing, Integration and Interoperability) of MEDSUV (<http://med-suv.eu>)
- 2013-2016: coordinator of task 4.3 (Theoretical deformation models and inversion/interpretation methodologies) of MEDSUV (<http://med-suv.eu>)
- 2011-2014: PON-VULCAMED

Field activities

- Sep. 2015: Coordination of the ESMACH experiment (Echoes from a Shallow Magma Chamber) within KMDP project. Deployment of 30 stand-alone seismic stations at Krafla volcano recording 59 artificial shots to image the top of a shallow rhyolitic magma chamber. In collaboration with ISOR (<http://www.geothermal.is>) and Landsvirkjun (<http://www.landsvirkjun.com>).
- 2003-2010: Maintenance activity at the INGV broadband seismic network of Stromboli volcano.
- 2001: Participation to the Serapis 2001 active seismic experiment in Campi Flegrei caldera.

Teaching activities

- Tutor of PhD students
 - 2010-2013, M. Longobardi, *Locating the source of volcanic tremor at Stromboli volcano, Italy*. PhD in Geophysics (Univ. Bologna).
 - 2011-2014, L. Nocerino, *Constrained inversion of seismo-volcanic events*. PhD in Geophysics (Univ. Bologna).
 - 2012-2015, E. Cristiano, *Ground deformation and seismogenetic processes at Campi Flegrei caldera*. PhD in Geophysics (Univ. Bologna).
 - 2013-2016, A. Angelillo, *Seismic array analysis in the Discrete Wavelet Domain*. PhD in Geophysics (Univ. Bologna)
- Co-tutor of more than 15 MSc students in Geology and Geophysics (Univ. Naples, Univ. Benevento, Univ. Rome)
- Periodic formation to the staff involved in the 24h surveillance of INGV-Osservatorio Vesuviano
- Educational activities for students and groups visiting the Monitoring Centre of INGV-Osservatorio Vesuviano.
- Short courses in “Seismic volcano monitoring”, “Analysis of seismic signals”, “Strategic topics in Geophysics” for Advanced Master students.
- Short course of scientific programming in Matlab for PhD students.

Computer skills

- Scientific programming: MATLAB, Python, C/C++, MPI, CUDA
- Seismic data processing: SeisComp3, Earthworm, SAC, SeismicUnix, ObsPy, NonLinLoc, HypoDD, FPFIT
- Numerical modelling: COMSOL (Multiphysics Finite Elements), MUFITS (Reservoir Simulation Software)
- Graphics: Generic Mapping Tool (GMT), CorelDraw
- Other: LaTeX, Unix shell, Microsoft Office

Language skills

- Italian: mother
- English: fluent
- Spanish: basic

Hobby

- Cooking
- Homebrewing
- Acquarium
- LGBT activism

Luca D'Auria