



NICOLA PIANA AGOSTINETTI

Curriculum Vitae

General Information

Full Name	PIANA AGOSTINETTI NICOLA
Date of Birth	
Place of Birth	
Citizenship	Italian
Permanent Address	
Mobile Phone Number	
E-mail	nicola.pianaagostinetti@unimib.it
Spoken Languages	Italian, English
ORCID	http://orcid.org/0000-0003-3145-2766
PUBLONS	https://publons.com/author/1196695/

Education

Degree	Year	Institution	Details
University graduation	2000	University of Bologna	Laurea quadriennale in Astronomia
PhD	2005	University of Urbino	PhD in Earth Sciences

Appointments

Start	End	Institution	Position
2021	present	Universita' di Milano Bicocca	Senior researcher (RTDB, tenure-track)
2021	present	Dublin Institute for Advanced Studies (DIAS)	Adjunct Professor
2020	present	ZED Depth Exploration Data GbmH	Co-founder
2020	present	University of Vienna	Research associate
2019	2020	University of Vienna	Lecturer
2017	2019	University of Vienna	Lise Meitner Senior Research Fellow
2012	2017	Dublin Institute for Advanced Studies (DIAS)	Research Fellow
2012	present	Istituto Nazionale di Geofisica e Vulcanologia	Research associate
2005	2012	Istituto Nazionale di Geofisica e Vulcanologia	Researcher, III lvl
2003	2005	Istituto Nazionale di Geofisica e Vulcanologia	Assegno di Ricerca
2001	2003	Istituto Nazionale di Geofisica e Vulcanologia	Borsa di studio

1. Research achievements

Keywords	Brief description
<p>Innovative methodologies for solving geophysical inverse problems</p>	<p>More than ten years of experience in the development of scientific tools for the solution of geophysical inverse problems, in the framework of Bayesian trans-dimensional Monte Carlo (trans-D) algorithms.</p> <p><i>Model-space investigation:</i> trans-D algorithms allow to avoid subjective (user-defined) choices about the physical model parametrization. Applications have been developed: for investigating the sub-surface with geophysical data (seismics, magneto-telluric and borehole data); for the definition of change-points in geophysical time-series, and for interpolating geophysical data from different sources.</p> <p><i>Data-space exploration:</i> trans-D algorithms allow to reduce/remove pre-processing of raw-data based on expert-opinion. Applications have been developed for seismological data (first-arrivals for seismic event location, double-difference data for monitoring induced seismicity, and 4D seismic data for time-lapse imaging of oil&gas/geothermal reservoirs).</p> <p>Collaborations with <i>Alberto Malinverno (LDEO, Columbia Univ., NY, USA), Alison Malcolm (Memorial Univ., Canada) and Thomas Bodin (Univ. Lyon, FRA).</i></p>
<p>Geo-imaging via passive seismic techniques</p>	<p>Studies of the structures and seismic properties of the shallow crust, for oil&gas, geothermal and ore body exploration, using academic research tools applied to industrial scale seismic data-sets.</p> <p>The common key-point of all these studies has been the comparison of the results obtained with the available knowledge from industrial partners, for estimating realistic uncertainties and assessing the resolving power of the adopted tools, a fundamental information for developing a technology transfer plan.</p> <p>Academic partners: <i>Dublin Institute for Advanced Studies (Ireland), Univ. of Vienna (Austria) and INGV (Italy).</i></p> <p>Industrial partners: <i>ZED GmbH (Austria), TullowOil plc (Ireland), New Boliden (Sweden), LKAB (Sweden), SpacEarth Technology (Italy)</i></p>
<p>Seismic data analysis</p>	<p>Development of an archive of teleseismic waveforms. The archive actually contains about 2.5 Millions of three-components waveforms recorded by more than one thousand of short-period and broad-band stations. Most of the waveforms have been extracted from the INGV Italian Seismic Network (2004-present): ~1.5 Millions records, ~450 seismic stations. The archive is locally stored.</p>
<p>Seismic data acquisition</p>	<p>Deployment and maintenance of networks of broadband seismometers at both regional and local scale.</p> <p>RETREAT project: ~35 seismic stations across Northern Apennines (Italy); CATSCAN project: ~30 stations along the Calabrian arc (Italy); SIM-CRUST project: 17 stations across Ireland. Lise Meitner project: 10 stations across the Vienna Basin (Austria)</p>

2. Experience with national and international funding bodies

Participation to proposal evaluation process

Year	Role and agency	Description
2014	Reviewer for US-NSF	Reviewer of scientific proposals for the US National Science Foundation – Geophysics competition – Spring panel 2014
2019	Expert for EC agency INEA	Evaluation of Horizon 2020 proposals (Geothermal energy) Call: H2020-LC-SC3-2019-RES-TwoStages Average requested budget per proposal: 5 Million Euro (Remote work and final on-site evaluation in Brussels)
2020	Expert for EC agency INEA	Evaluation of Horizon 2020 proposals (Geothermal energy) Call: H2020-LC-SC3-RES-1-2019-2020 Average requested budget per proposal: 4 Million Euro (Remote work)

Funds awarded by national and international agencies, and industrial partners [grants as PI-principal investigator or SC-scientific coordinator]

Year	Role	Project	Funding source	Grant value
2012	PI	SIM-CRUST https://sim-crust.dias.ie	Science Fundation Ireland SIRG programme	563 973 Euro
2015	PI	Shallow crustal exploration using passive seismics: bridging the gap between academic research and industrial-scale applications	Science Fundation Ireland Industry Fellowship	93 181 Euro
2017	SC	Mines-In-Time (MiT): 4D Local Earthquake Tomography for monitoring mines https://eitrawmaterials.eu/spacearth-technology-start-up-delivers-mines-in-time/	EiT Raw Material Spin – off Booster call	50 000 Euro
2017	PI	Seismic properties of the Vienna basin	Austria Science Fund Lise Meitner programme	162 180 Euro
2019	SC	DUM4SUM: 4D Local Earthquake Attenuation Tomography for monitoring mines	EiT Raw Material Spin – off Booster call	45 000 Euro
2020	SC	Velocity changes in Kiruna Mine using 4D passive seismic tomography	LKAB-ZED Research project	36 000 Euro
2020	SC	Monitoring elasticity changes in Kiruna mine during May 2020	LKAB-ZED Research project	45 000 Euro

Participation to international projects funded by national funding agencies

Year	Title	Program
2004	Investigator	CAT/SCAN (NSF grant number # EAR 99-10554)
2007	Investigator	BanglaPIRE (NSF grant number # 0968354) http://www.banglapire.org/people
2015	Investigator	iCRAG: Irish Center for Applied Geophysics (SFI grant number # 13/RC/2092) http://www.icrag-centre.org/people/dmicolapianaagostinetti.html

3. Technology transfer

Year	Role	Companies involved	Description
2017	Senior scientist and code developer	INGV Spin-off: SpacEarth Technology Mining company: New Boliden plc https://eitrawmaterials.eu/spacearth-technology-start-up-delivers-mines-in-time/	Validation in the relevant environment of “Mines-in-Time (MiT), a tool for monitoring rock elasticity in mines based on the trans-dimensional Local Earthquake Tomography algorithm (see selected publications).
2020	Co-founder and code developer	Start-up: ZED Depth Exploration Data Start-up incubator: INiTS IaaS company: Vienna Scientific Cluster	Validation in the relevant environment of ZED-4D, an innovative solution for 4D seismics data analysis. ZED-4D is based on a trans-dimensional algorithm for the exploration of the data space (see selected publications). Computational resources are rented from VSC.
2021	Patent inventor	Start-up: ZED Depth Exploration Data	PCT/EP2021/061476: GEOPHYSICAL DATA-SPACE MINING USING A TRANS-DIMENSIONAL ALGORITHM

4. Teaching qualification, teaching experience, supervising activities and organization of international meetings

Academic qualification

Start	End	Institution	Qualification
2017	2026	MIUR	Abilitazione Scientifica Nazionale come professore universitario di II fascia, SC 04/A4 (Italian National Academic Qualification as Associate Professor)
2017	2026	MIUR	Abilitazione Scientifica Nazionale come professore universitario di I fascia, SC 04/A4 (Italian National Academic Qualification as Full Professor)

Courses

Start	End	Institution	Lecture/Course
2015	2017	DIAS	Monte Carlo approach to geophysical inverse problem: an introduction (one week, intensive short-course: lectures, 12 hours, and laboratory, 12 hours. http://www.iggp.ie/details.html#monte
2019	2020	UniVienna	3D mapping and geostatistical data analysis: Cases studies in high alpine terrain (15-hours lectures, 4-days fieldwork, 10-hours laboratory activities) https://ufind.univie.ac.at/en/course.html?v=450005&semester=2020S
2020	2021	Universita' Milano-Bicocca	Applied Geophysics (Fieldwork: 12 hours, lectures: 24 hours) Geophysics (Laboratory activities: 24 hours)

Students

Start	End	Institution	Student
2012	2016	Dublin Institute for Advanced Studies	[REDACTED], PhD student SIM-CRUST project
2016	2017	Dublin Institute for Advanced Studies	[REDACTED], DIAS scholarship (Master)
2017	2021	Dublin Institute for Advanced Studies	[REDACTED], PhD student
2018	2021	Universita' di Camerino	[REDACTED], PhD student
2020	2021	Universita' di Milano Bicocca	[REDACTED], Ms student

Participation to evaluation panel for PhD students

Year	School
2019	External referee of the PhD panel for the student [REDACTED], Universita Karlova (Praha, CK)

Organization of international meetings

Year	School
2010	International School of Geophysics: Non–Steady–State Subduction: Changes in the Calabrian Arc and its Mediterranean Setting (Erice, 3-8 October 2010)

Additional scientific activities

Year	Title	Description
2009	Participation to seismic monitoring during earthquake emergency	Aquila 2009 seismic sequence. Activities at COES
2007	Reviewer	Reviewer activity for international journals (e.g. GJI, GRL, EPSL, Tectonophysics, Inverse Problems, Journal of Geodynamics, JGR – Solid Earth, Solid Earth, Geophysics, Tectonics, G-cubed)

5. Statistics of peer-reviewed publications on journals with JCR impact factor

Product type	Number	Data Base	Start	End
Papers [international]	66	Scopus (last seen: 2021/10/02)	2002	2021

Total Citations	1721
Average Citations per Product	26.07
Hirsch (H) index	22