Personal information

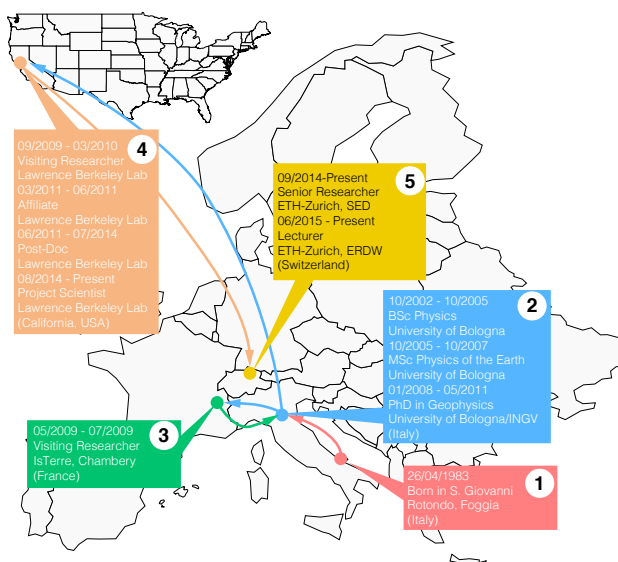|	
Surname(s) / First name(s)	**Rinaldi Antonio Pio**
Address(es)	– Sonneggstrasse 5 (NO H 57), Zürich, 8092, SWITZERLAND
	– 1 Cyclotron Road (74-107), Mail Stop 74R316C, Berkeley, CA, 94720, USA
	– Via G. Borsi 2/A, 71013 San Giovanni Rotondo, Foggia, ITALY
Telephone(s)	(+41) 44 63 2 7353 Mobile: (+41) 787977283, (+39)3200786054
Email(s)	antoniopio.rinaldi@sed.ethz.ch, aprinaldi@lbl.gov, antoniopio.rinaldi@gmail.com
Nationality(-ies)	Italian
Date of birth	26/04/1983

In Brief

09/2009 - 03/2010
Visiting Researcher
Lawrence Berkeley Lab
03/2011 - 06/2011
Affiliate
Lawrence Berkeley Lab
06/2011 - 07/2014
Post-Doc
Lawrence Berkeley Lab
08/2014 - Present
Project Scientist
Lawrence Berkeley Lab
(California, USA)

4

09/2014-Present
Senior Researcher
ETH-Zurich, SED
06/2015 - Present
Lecturer
ETH-Zurich, ERDW
(Switzerland)

5

10/2002 - 10/2005
BSc Physics
University of Bologna
10/2005 - 10/2007
MSc Physics of the Earth
University of Bologna
01/2008 - 05/2011
PhD in Geophysics
University of Bologna/INGV
(Italy)

2

05/2009 - 07/2009
Visiting Researcher
IsTerre, Chambery
(France)

3

26/04/1983
Born in S. Giovanni
Rotondo, Foggia
(Italy)

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Employment

Jun 2015 - present	Lecturer, Swiss Federal Institute of Technology, ETH, Zürich, Switzerland
Sept 2014 - present	Senior Assistant (Oberassistent), Swiss Seismological Service (Schweizerischer Erdbebendienst - SED), ETH, Zürich, Switzerland *currently P.I. SNSF Ambizione Energy 2015 Research Grant*
Aug 2014 - present	Project Scientist (Limited), Lawrence Berkeley National Laboratory, Berkeley, California, USA
Jun 2011 - Jul 2014	Geological Postdoctoral Fellowship (Geomechanics), Lawrence Berkeley National Laboratory, Berkeley, California, USA
Mar 2011 - May 2011	Affiliate, Lawrence Berkeley National Laboratory, Berkeley, California, USA

Teaching experience

ETH, Zürich

Bachelor in Earth Sciences (Erdwissenschaften Bachelor)

- **2014/2015 - 2015/2016**: *Geophysical Field Practicum* (Module: Geothermics)

Master in Earth Sciences - Major in Geophysics

- **2015/2016 - present**: *Earthquakes I: Seismotectonics* (responsible lecturer)

- **2017/2018 - present**: *Earthquakes II: Source Physics* (responsible lecturer)
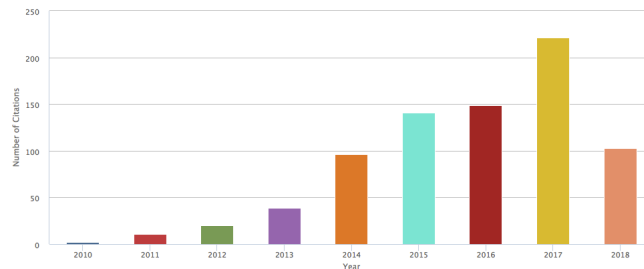
4th Summer School on Flow and Transport in Porous and Fractured Media,

Induced seismicity and GeoEnergies: lessons learned from coupled hydro-mechanical modeling (**Invited Lecturer**)
June 25 - July 07, 2018, Cargèse , Corsica, France

Bibliometrics
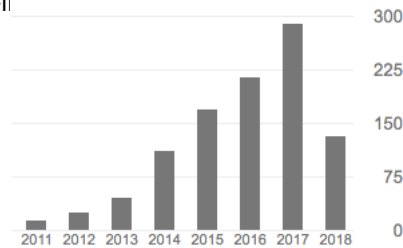*(updated Aug. 13th, 2018)*

Scopus

Documents: 45
Citations: 782
h-index: 17

Google Scholar

Citations: 1015
h-index: 17
i10-i

Reserch interest

Present activity

- Geomechanics associated with carbon sequestration, shale gas, and enhanced geothermal system.
- Natural- and Human-Induced seismicity.
- Numerical simulation of heat and fluid flow through a porous medium and geomechanics using 1D, 2D, axisymmetric, and 3D meshgrid.

Past activity

- System instability in deep saline aquifer.
- Volcanology and hydrothermal systems:
    - Electrical conductivity, ground displacement and gravity changes in hydrothermal systems.
    - Atmospheric conditions and soil diffuse degassing.

Supervised students and postdocs

Students	*V. Ritz* (Feb 2017-present, ETHZ-SED)
	D. Zbinden (Nov 2015- present, ETHZ-SED)
	M. Nespoli (Nov 2014 - Apr 2015, Visiting, ETHZ-SED)
	M. Miah (Mar 2014 - Aug 2014, Visiting, LBNL)
Postdocs	*L. Urpi* (Sept 2015 - present, ETHZ-SED)

Education

Jan 2008 - May 2011	Ph.D. in Geophysics, Università di Bologna
Thesis	*"Modeling hydrothermal system: deriving observables and hydrothermal instability in volcanic and non-volcanic setting"* Thesis supervisor: Dr. M. Todesco - Prof. M. Bonafede.
Oct 2005 - Oct 2007	2nd Level Degree - Master of Science in Physics of the Earth (final degree mark 110/110 cum Laude), Università di Bologna.
Degree Thesis	*"Effetti di un sistema idrotermale eterogeneo su osservabili geofisici"* (Effects of heterogeneous hydrothermal system on geophysical observables) in *"Fondamenti di Geofisica"* (Fundamentals of Geophysics). Thesis supervisor: Prof. M. Bonafede, Co-supervisor: Dr. M. Todesco.
Oct 2002 - Oct 2005	1st Level Degree - Bachelor of Science in Physics (Final degree mark 110/110 cum Laude), Università di Bologna.
Degree Thesis	*"Studio sulle correzioni all'energia dell'elettrone con il rivelatore ZEUS ad HERA II"* (Study of electron energy correction with the detector ZEUS at HERA II) in *"Introduzione alla Fisica Moderna"* (Introduction to Modern Physics). Thesis supervisor: Prof. L. Cifarelli.
Jun 2002	High School - Maturità scientifica (Examination mark 100/100), Liceo Scientifico Statale *"E. Fermi"*, San Marco in Lamis, Foggia (Italy).

Professional service

2018 - present	Reviewer for UK Natural Environment Research Council (NERC)
2017	Chair editor 51st US Rock Mechanics/Geomechanics Symposium
2014 - present	Reviewer for the Swiss National Science Foundation (SNSF)

2010 - present	Peer-reviewed articles for: Comput Geosci, Geomech Energy Env, Geofluids, Geophys J Int, Geothermics, Greenh Gas Sci Tech, Hydrogeol J, Int J Greenh Gas Contr, Int J Min Sci Tech, J Appl Geophys, J Can Petrol Tech, J Geophys Res, J Math Ind, J Struct Geol, Pure Appl Geophys,Sci Rep, Tectonophysics

Other works

2004 - 2007	Part-time laboratory assistant at Physics and Astronomy Department (University of Bologna):

- Computer Science & Programming
- General Physics laboratory

2001 - 2007	Private physics and math tutor for high school and university students

Awards and Grants

2016	**Elsevier Recognition for Highly Cited Research**
Paper	*"Modeling of deep fracture zone opening and transient ground surface uplift at KB-502 CO_2 injection well, In Salah, Algeria"*, Int. J. Greenh. Gas Control, 12, 155-167.
2015	**SNSF Ambizione Energy 2014/2015**
Project Title	*"To induce or not to induce: an open problem. Study on injection-induced seismicity for GeoEnergy applications, from lab to field scale"* Principal Investigator
2009	**Marco Polo Fellowship**
Project Title	*"Modeling and simulation of hydro-geomechanical processes and associated geophysical measurements"* Supervisor: Prof. C. M. Oldenburg
2005	**DESY Summer Student Programme**
Project Title	*"A study of electron energy correction in DIS events with the detector ZEUS at HERA II"* Supervisor: Dr. A. Bruni
2003 - 2007	**Student scholarship - University of Bologna**

Projects

2017-present	**ACT - Accelerating CCS Technologies (ERA-NET Cofund Actions)**
Project Title	*"ELEGANCY: Enabling Low-Carbon Economy via Hydrogen and CCS"*

Subproject Title	*"Efficient generation of renewable H_2 from biomass, while harvesting geothermal heat and enabling negative CO_2 emissions"*
Role	Deputy manager for the Swiss contribution
2016-present	**Research Agreement SED-ENSI**
Project Title	*"Hydromechanical modeling of the fault slip experiment at Mont Terri"*
Role	Principal Investigator
2015-present	**SNSF Ambizione Energy 2014/2015 - Research Grant**
Project Title	*"To induce or not to induce: an open problem. Study on injection-induced seismicity for GeoEnergy applications, from lab to field scale"*
Role	Principal Investigator
2014-present	**Research Agreement SED-ENSI**
Project Title	*"Erdbebenforschung zu Schweizer Kernanlagen"* (Earthquake research for Swiss core plants)
Subproject Title	*"Induced seismicity in geological nuclear waste disposal"*
Role	Subproject Coordinator
2016-2017	**Research Agreement SED-INGV**
Project Title	*"Modeling seismicity at the Val d'Agri basin (Italy)"*
Role	Principal Investigator
2011-2015	**National Risk Assessment Partnership (NRAP)**
Subproject Title	*"Quantify Prediction for Potential Ground Motion"*
Role	Participant
2011-2014	**Consolidated Sequestration Research Project (CSRP)**
Subproject Title	*"GEO-SEQ: In Salah Industrial-Scale CO_2 Storage"*
Role	Participant
2012-2014	**DPC-INGV Volcanology - V2 project: Eruption precursors**
Subproject Title	*"Inverse modeling of hydrothermal fluid circulation"*
Role	Participant
2008-2010	**DPC-INGV Volcanology - V1 project: Unrest**
Subproject Title	*"Realization of an integrated method for the definition of the unrest phases at Campi Flegrei"*
Role	Participant

Visited Institutions

Aug 2013 - Nov 2013	Helmholtz-Zentrum Potsdam Deutsches GeoForschungsZentrum (GFZ), Potsdam, Germany
Sept 2009 - Mar 2010	Lawrence Berkeley National Laboratory (LBNL), Berkeley, California, USA
May 2009 - Jul 2009	Laboratoire de Géophysique Interne et Tecnophysique (LGiT, now IS-Terre), Université de Savoie, Le Bourget du Lac, France
Jul 2005 - Sept 2005	Deutsches Elektronen-Synchrotron Laboratory (DESY), Hamburg, Germany

Skills

OS	Excellent knowledge of both *Windows* and *Unix* operating system.
Programming/Scripting languages	*Fortran77*, *Fortran90*, *C*, and *C++*, *MATLAB*, shell scripting (*bash*,*sh*,*csh*), *Python*, elements of *Java*.
Scientific Softwares	*Flac*, *Flac3D*, and *3DEC* geomechanical simulator. *TOUGH2* multiphase fluid flow simulator, *Pylith* geodynamical simulator.

Own Scientific Softwares/Tools

a) **TOUGH2Seed**: multiphase fluid flow simulator coupled with a geomechanical stochastic code for the study of induced seismicity

b) Coupling subroutines and physical-mathematical models for code **TOUGH-FLAC**

c) **Matlab2TOUGH**: scripting tool for the analysis of *TOUGH2* simulations results

d) **Flac2TOUGH**: scripting tool for meshgrid transfer from *Flac3D* to *TOUGH2*

Others	*Office* softwares, LATEX and *Adobe Illustrator* for the manipulation and the visualization of data sets. Can learn new skills quickly. Able to work within a group environment.

Languages
- Italian: Native
- English:
  - Understanding: Listening (C1) - Reading (C2)
  - Speaking: Spoken interaction (C2) - Spoken production (C2)
  - Writing (C2)
- French:
  - Understanding: Listening (A2) - Reading (B1)
  - Speaking: Spoken interaction (A2) - Spoken production (A1)
  - Writing (A2)
- German:
  - Understanding: Listening (A1) - Reading (A1)
  - Speaking: Spoken interaction (A1) - Spoken production (A1)
  - Writing (A1)

Courses

Solving Simulation-Optimization Problems Using iTOUGH2, September 15-16, 2011, Lawrence Berkeley National Laboratory, Earth Sciences Division, Berkeley, CA, USA

Learning to Teach, September 27-28, 2016, ETHZ, Zurich, Switzerland

Parallel Programming with MPI/OpenMP, August 21-24, 2017, ETHZ, Zurich, Switzerland

Autorizzo il trattamento dei miei dati personali ai sensi della legge 196/2003 e sue successive modifiche.