



Virginie Pinel

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French citizenship
49 years old, married, two children
Senior Researcher at IRD, based at ISTerre laboratory since 2004

RESEARCH INTERESTS Physical Volcanology & Remote sensing

- ◆ Thermo-mechanical modelling of crustal behavior and magma transport.
- ◆ Study of volcanoes by satellite imagery (radar and optical): deposits mapping, surface displacements measurement.
- ◆ Impact of climate change on magmatic systems.
- ◆ Crustal deformation of volcanoes.

EDUCATION-RESEARCH EXPERIENCE

2012	HDR diploma , Université de Grenoble (French habilitation to lead scientific research)
2003-2004	Post doctoral Fellow supported by the French Space Agencie, IPGP, France
2002-2003	Assistant professor, IPGP, France
1999-2002	Teaching assistant, Université Paris VII, France
1998-2002	PhD (Nov. 2002), IPGP , « Growth and destruction of volcanic edifices : Consequences for magma transport and storage. », Supervisor: Prof. Claude Jaupart
1995-1997	Junior civil servant at Ecole Normale Supérieure de Lyon

ACADEMIC and SCIENTIFIC RESPONSABILITIES

PI of projects supported by space agencies and providing SAR data (ESA Cat 1 project, ESA Cat 1 project n° 7218, Cosmo-Skymed project n° 2257, DLR project GEO1598, DLR project IDEM_GEO1000, DLR project OTHER 6947, JAXA project n°1188, n°3245, JAXA EO-RA3 n°ER3A2N012).

Scientist in charge of EU project VOLUME « Volcanoes : Understanding subsurface mass movement », for the Université de Savoie, 2005-2009.

Scientist in charge of ANR project « EFIDIR : Extraction et Fusion de l'Information pour la mesure des Déplacements en Imagerie Radar », ANR-07-MDCO-004-05 for the LGIT, 2008-2011.

Scientist in charge of task « Local scale models: dyke, faults and landslides » of EU project MEditerranean SUPersite Volcanoes (MEDSUV- 2013-2017).

PI of ANR project [MagmaPropagator](https://magmapropagator.osug.fr/) (2019-2022, 160k€, <https://magmapropagator.osug.fr/>) in the frame of a French-German cooperation (ANR-DFG NLE 2018, Co-PI E. Rivalta, GFZ, Potsdam)

Member of scientific committee of Vulcania since 2011, Member of council of ISTerre 2011-2015,

Member of the French National Evaluation Committee (CNRS hiring committee in Earth Sciences) 2012-2016,

Member of scientific committee of ForM@Ter since 2015, Member of CCS1 (IRD) (2024-2028)

Head of the Volcano Team at ISTerre 2017-2021.

Co-convener of the session Volcanic Processes: Tectonics, Deformation, Geodesy, Unrest at EGU General Assembly since 2019.

Member of the scientific or organization committee of MDIS Conference (2015, 2017), Multitemp 2015,

GeoMod2016, GeoMod2023, Wegener General Assembly 2018, Fringe 2021, Fringe 2023

Topical editor for Solid Earth

STUDENTS SUPERVISION

Supervision of 9 PhD students:

- F. Albino (2007-2011), 8 co-authored peer-reviewed papers and book chapters, now researcher at ISTerre
- Y. Yan (2008-2011), 5 co-authored peer-reviewed papers, now researcher at University of Savoie Mont-Blanc
- A. Solikhin (2011-2015), 2 co-authored peer-reviewed papers, now researcher at CVGHM, Indonesia

- L. Chevalier (2013-2017), 1 co-authored, peer-reviewed paper, now recruited at EDF
- M.G. Bato (2015-2018), 3 co-authored peer-reviewed papers, now recruited at JPL, USA
- D. Smittarello (2016-2019), 4 co-authored peer-reviewed papers now researcher at ECGS, Luxembourg
- S. Gremion (2021-2024), 2 co-authored peer-reviewed papers
- L. Zuccali (2022-), P. Bouygues (2023-)

Post-doc supervision:

S. Furst (2020-2021), 4 co-authored peer-reviewed papers

Occasional participation in the supervision of PhD students/Post-docs :

P. Traversa (2006-2009), 1 co-authored paper, now researcher at EDF, M. Chaput (2010-2013), 1 co-authored paper, T. Shreve (2017-2020) 2 co-authored paper, D. Walwer (2018-2020) 1 co-authored paper, Alec Yates (2020-2023) 1 co-authored paper, A. Le Contellec (2021-2024) 1 co-authored paper.

Student examination: more than 20 thesis juries (6 different countries).

TEACHING

Level : Bachelor, Master and PhD Levels

Locations : University of Paris VII, University of Grenoble, University Savoie Mont-Blanc, Institut Teknologi Bandung (ITB), Indonesia, CVGHM, Indonesia.

Fields : Fluid dynamics, Continuum mechanics, Signal processing, Gravity field, Magnetic field, Volcanology, Remote sensing.

MOOC : ORISAT <https://www.fun-mooc.fr/en/courses/remote-sensing-of-natural-hazards-orisat/>

10 major publications in the past ten years

Among 66 papers published in peer-reviewed journals (25 as first author or just behind a student) and 12 book chapters, CI =2159, HI=26

<http://www.researcherid.com/rid/D-9949-2014>

◆ Furst, S., Maccaferri, F., & **Pinel, V.** Modeling the shape and velocity of magmatic intrusions, a new numerical approach. *Journal of Geophysical Research: Solid Earth*, 128, e2022JB025697, 2023 <https://doi.org/10.1029/2022JB025697>

◆ S. Grémion, V. Pinel, T. Shreve, F. Beauducel, R. Putra, A. Solikhin, A. B. Santoso, H. Humaida, Tracking the evolution of the summit lava dome of Merapi volcano between 2018 and 2019 using DEMs derived from TanDEM-X and Pléiades data, *Journal of Volcanology and Geothermal Research*, 433, 2023, <https://doi.org/10.1016/j.jvolgeores.2022.107732>

◆ M. Gouhier, V. Pinel, J. M.C. Belart, M. De Michele, C. Proy, C. Tinel, E. Berthier, Y. Guéhenneux, M. T. Gudmundsson, B. V. Oskarsson, S. Gremion, D. Raucoules, S. Valade, F. Massimetti, B. Oddsson, CNES-ESA satellite contribution to the operational monitoring of volcanic activity: The 2021 Icelandic eruption of Mt. Fagradalsfjall, *Journal of Applied Volcanology*, 11, 10 (2022) <https://doi.org/10.1186/s13617-022-00120-3>

◆ T. J. Aubry, J. Farquharson, C. R. Rowell, S. Watt, V. Pinel, Frances Beckett, John Fasullo, Peter O. Hopcroft, David M. Pyle, Anja Schmidt, John Staunton Sykes, Impact of climate change on volcanic processes: current understanding and future challenges, *Bull Volcanol* **84**, 58, 2022.

◆ M. G. Bato, P. Lundgren, **V. Pinel**, R. Solidum, A. Daag, M. Cahulogan, The 2020 eruption and the large lateral dike emplacement at Taal volcano, Philippines: Insights from satellite radar data, *Geophysical Research Letters*, <https://doi.org/10.1029/2021GL092803>, 2021

◆ F. Sigmundsson, **V. Pinel**, R. Grapenthin, A. Hooper, S. A. Halldorsson, P. Einarsson, B. G. Ofeigsson, E. R. Heimisson, K. Jonsdottir, M. T. Gudmundsson, K. Vogfjord, M. Parks, S. Li, V. Drouin, H. Geirsson, S. Dumont, H. M. Fridriksdottir, G. B. Gudmundsson, T. Wright, T. Yamasaki, Unexpected large eruptions from buoyant magma bodies within viscoelastic crust, *Nature Communications*, 2043, <https://doi.org/10.1038/s41467-020-16054-6>, 2020

◆ D. Smittarello, V. Cayol, **V. Pinel**, A. Peltier, J.-L. Froger, V. Ferrazzini, Magma Propagation at Piton de la Fournaise from joint inversion of InSAR and GNSS, *J. Geophys. Res. Solid Earth*, 124, 1361-1387, 10.1029/2018JB016856, 2019

◆ M. G. Bato, **V. Pinel**, Y. Yan, F. Jouanne, J. Vandemeulebrouck, Possible deep connection between volcanic systems evidenced by sequential assimilation of geodetic data, *Scientific Reports*, doi : 10.1038/s41598-018-29811-x, 2018.

◆ **V. Pinel**, A. Carrara, F. Maccaferri, E. Rivalta, F. Corbi, A two-step model for dynamical dyke propagation in two-dimensions: Application to the July 2001 Etna eruption, *J. Geophys. Res. Solid Earth*, 10.1002/2016JB013630, 2017.

◆ **V. Pinel**, M. Poland, A. Hooper, Volcanology : Lessons learned from Synthetic Aperture Radar imagery, *J. Volcanol. Geotherm. Res.*, 81-113, 10.1016/j.jvolgeores.2014.10.010, 2014.