

Virginie Pinel

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

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RESEARCH INTERESTS Physical Volcanology & Remote sensing

- ◆ Thermo-mechanical modelling of magma transport.
- ◆ Study of volcanoes by satellite imagery (radar and optical): deposits mapping, surface displacements measurement.
- ◆ Long and short term evolution of 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 C.N.E.S., 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_GEOL0100, 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 SUper-site 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

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, Wegener General Assembly 2018, Fringe 2021

Topical editor for Solid Earth

STUDENTS SUPERVISION

Supervision of 8 PhD students:

- F. Albino (2007-2011), 6 co-authored, peer-reviewed papers, 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-), 2 co-authored peer-reviewed papers
- L. Zuccali (2022-)

Post-doc supervision:

S. Furst (2020-2021)

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) 1 co-authored paper, D. Walwer (2018-2020) 1 co-authored paper, Alec Yates (2020-).

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.

10 major publications in the past five years

Among 59 papers published in peer-reviewed journals (25 as first author or just behind a student) and 7 book chapters, CI = 1724, HI = 22

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

- ◆ C. Annen, **V. Pinel**, A. Burgisser, Re-evaluation of the role of volatiles in the rupture of magma chambers and the triggering of crystal-rich eruptions, *Journal of Volcanology and Geothermal Research*, 2023, <https://doi.org/10.1016/j.jvolgeores.2023.107755>
- ◆ **V. Pinel**, S. Furst, F. Maccaferri F and D. Smittarello, Buoyancy Versus Local Stress Field Control on the Velocity of Magma Propagation: Insight From Analog and Numerical Modelling. *Front. Earth Sci.* 10:838318. [doi: 10.3389/feart.2022.838318](https://doi.org/10.3389/feart.2022.838318), 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
- ◆ C. Michaut, **V. Pinel**, F. Maccaferri, Magma ascent at floor-fractured craters diagnoses the lithospheric stress state on the Moon, *Earth Planet. Sci. Lett.*, vol. 530, <https://doi.org/10.1016/j.epsl.2019.115889>, 2020
- ◆ A. Carrara, **V. Pinel**, P. Bascou, E. Chaljub, S. De la Cruz-Reyna, Post-emplacement dynamics of andesitic lava flows at Volcan de Colima, Mexico revealed by radar and optical remote sensing data, Mexico, *J. Volcanol. Geotherm. Res.*, 1-15, <https://doi.org/10.1016/j.jvolgeores.2019.05.019>, 2019
- ◆ F. Maccaferri, D. Smittarello, **V. Pinel**, V. Cayol, On the propagation path of hydrofractures and magma-filled dikes: the competition between external stress, internal pressure, and crack length, *Geochemistry, Geophysics, Geosystems*, doi:10.1029/2018GC007915, 2019
- ◆ 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](https://doi.org/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.