

Curriculum Vitae

PERSONAL INFORMATION

Family name and First name: Moretti Roberto

Date of birth: May 6th, 1972

Place of birth: La Spezia (I)

Present Affiliation and Address : Université de Paris Cité, Institut de Physique du Globe de Paris, UMR 7154 CNRS, 1 rue Jussieu, 75005 Paris (F) *and* Observatoire Volcanologique et Sismologique de Guadeloupe, Institut de Physique du Globe de Paris, 97113 Gourbeyre (F).

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• CURRENT POSITION

Since September 2018 : Physicien du Globe^{1,2} (permanent position) at *Université de Paris Cité, Institut de Physique de Globe de Paris*³, UMR 7154 CNRS. Like *Professeurs des Universités*, with whom they share the same rank and status as Full Professor, *Physiciens* are French *Enseignants-Chercheurs*. Their ruling body is the *Conseil National des Astronomes et Physiciens*, CNAP), whereas for Univ. Professors is the *Conseil National des Universités* (CNU). I was the first of the two winners classed after the March 2018 national selection. The attribution of this position to personnel external to the CNAP is an uncommon event. Note that given my CV and provenance from a foreign status, I was dispensed from having the *Habilitation à Diriger des Recherches* (HDR), the highest degree in France (same as the “*Libera Docenza*” that was long ago suppressed in Italy): HDR was recognized to be implicitly acquired in my case, being already a tenured professor.

I am currently *Physicien 1^{ère} classe*.

Notes: ¹Compared to *Professeurs d'Université*, *Physiciens* (and also *Astronomes*) are Observatory Professors with three statutory missions rather than two: **a) fundamental research**, **b) University teaching**, and **c) observational science/monitoring** for the *Observatoire des Sciences de l'Univers* (OSU) associated with the affiliating University. Given the equivalence with Univ. Professors, *Physiciens* and *Astronomes* can sit in all commissions and juries, including those for hiring Univ. Professors.

²Being national positions, *Physiciens* and *Astronomes*, can ask to move to a different University within the French territory and overseas, wherever an OSU is established.

³The *Institut de Physique du Globe de Paris* (IPGP, founded in 1921) is a *Grand Etablissement d'Enseignement Supérieur et de Recherche* and one the four members and co-founders of the *Université Paris-Cité*, established in 2019. As such, IPGP maintains its juridical status of independent *Grand Etablissement*. Besides, IPGP is the largest French OSU, in charge of the three overseas geophysical observatories and their seismic and volcanological monitoring and surveillance (Guadeloupe, Martinique, Reunion+Mayotte).

Since 2018 I am acting as the Head (*Directeur et Responsable Scientifique*) of the *Observatoire*

Volcanologique et Sismologique de Guadeloupe(OVSG), one of the three overseas geophysical observatories of France, all managed by the IPGP.

I am exempted from teaching duties during my stint as the OVSG director, which is going to end in September 2022, when I'll move to IPGP headquarters in Paris.

• EDUCATION AND HABILITATIONS

2018 On 9 February 2018 I got the *Qualification* (n. 18135199928) as *Professeur des Universit * for the class 35 (*Structure et  volution de la terre et des autres plan tes*) of French Universities. Note that given my CV and provenance from a foreign status, I was dispensed from having the *Habilitation   Diriger des Recherches* (HDR).

2014 Italian National Professorship Habilitation (2012 application, i.e., the **very first** campaign since introduction of the habilitation by Italian Law) obtained on 6 February 2014 for the position of *Professore Ordinario* (Full Professor) in Volcanology and Geochemistry (SC 04/A1; SSD GEO/08), with 3/3 medians passed and unanimous consensus of all the members (5) of the national evaluation committee (this item is the Italian equivalent of the French one above). The national habilitation will expire on 6 February 2023.

April 2002 PhD in Earth Sciences (Cycle XII of the Italian PhD program); four-year course (unique to Univ. of Pisa at that time), extended 1 year to a total of five years for work reasons. Dissertation title: "Volatile Solubility in silicate melts with particular regard to sulphur species: theoretical aspects and applications to Etnean volcanics" (in English); School of Doctorate in Earth Sciences, Dept. of Earth Sciences, University of Pisa (Italy) (supervisors: F. Innocenti and G. Ottonello).

March 1996 (Univ. year 94-95) Doctor of Science (DSc) Degree (Italian single-cycle *Laurea*, aka *Laurea Vecchio Ordinamento*) in Geological Sciences. Thesis title "Mixing properties of garnets along the binary join $(Ca,Mg)_3Al_2Si_3O_{12}$ and thermobarometric implications" (given in Italian), Faculty of Science, University of Genova (Italy). Final grade: 110/110 *e Lode*.

Other Achievements:

November 2010: 3-year Habilitation (so-called *Idoneit * in the ancient system, pre-"Gelmini" reforming law 240/2010 Reform) for the position of *Professore Associato* (Associate Professor) in Volcanology and Geochemistry (SSD GEO/08), University of Perugia ("concorso 2008", executed in 2010).

2001 National habilitation (started in February 2000, before getting the Researcher position at "Osservatorio Vesuviano") as High School Professor of Sciences, Geography, Microbiology (A060 class of the Italian School system), classified 60th/1500 in the Campania region. I refused the permanent position offered in July 2007.

• PREVIOUS POSITIONS, VISITING PERIODS AND STAGES ABROAD

November 2017 to September 2018: One-year invited as IPGP Physicien (with *avis tr s favourable* from CNAP). Position interrupted since September 2018 because RM switched to the permanent position. Based in Guadeloupe at the Observatoire de Volcanologie et Sismologie de la Guadeloupe, of which the coordination and scientific guidance is ensured

since 2018.

Since January 2011 to september 2018: Associate Professor in Geochemistry and Volcanology (Italian University class: A4/01 and GEO-08), based at *Università degli Studi della Campania "Luigi Vanvitelli"*, Scuola PoliSciBa, Dipartimento di Ingegneria (Aversa, Italy). "Confirmed Associate Professor" since 2014. *From November 2017 to September 2018*, I was in sabbatical leave ("Congedo Straordinario per motive di studiuo e ricerca").

Since September 2018 I've been taking a 5-year leave ("aspettativa"), according to the Italian Law 240/2010.

1st June 2000 to 28 January 2011: Geophysical Researcher (Observatory Researcher with University status; law 163/1982 and D.P.R. 382/1980) at Osservatorio Vesuviano (since 2001 Istituto Nazionale di Geofisica e Vulcanologia, INGV), Napoli (Italy). "Confirmed Researcher" since 2003. I had duties of geochemical monitoring and seismic surveillance of Campanian volcanoes

2011- 2015 Associate research staff (two-year commitment, renewed in 2013) Osservatorio Vesuviano, Istituto Nazionale di Geofisica e Vulcanologia, Napoli (Italy)

2013-2016 Adjunct Professor at the Department of Geology of the St. Mary's University (Halifax, CA).

2008 Visiting Scientist, Institut de Physique du Globe de Paris (2 months)

2010 Visiting Scientist, Institut de Physique du Globe de Paris (2 months)

2012 Visiting Professor, Institut de Physique du Globe de Paris (2 months)

2014 Visiting Professor, Institut de Physique du Globe de Paris (1 month)

2016 Visiting Professor, Université Paris VII "Denis Diderot" (1 month)

2017 Visiting Professor (March and June) at Institut de Physique du Globe de Paris

Part of my PhD course (around 1 year) was spent at Laboratoire Pierre-Sue (CNRS & *Commissariat à l'Energie Atomique*, Gif sur Yvette, F), under the supervision of N. Métrich and R. Clocchiatti.

Part of my graduation work (around 1 month in 1996) was spent at Geocentrum of University of Uppsala (Sweden), under the supervision of S.K. Saxena (HP synthesis and Raman spectroscopy).

• PRIZES AND MENTIONS

-1999 Recipient of the 'Giuseppe Schiavinato' prize from Mineral Sciences, attributed on 18 June 1999 by *Accademia Nazionale dei Lincei* in Rome in the occasion of the ceremony for the closure of the Academic Year at the presence of the President of the Republic of Italy, Prof. C.A. Ciampi.

- 2021: *Prime d'Encadrement Doctoral et Recherche* (PEDR) for the period 2021-2025. PEDR obtained with grade 4A (highest) by the national evaluation committee (the 4A grade by the CNAP-CNU jury put me into the highest 20% of selected recipients, implying direct attribution of the premium allowance without going through the local ranking of selected scientists).

- 9 Nov 2021 : medal of the *Rectorat de la Région Guadeloupe* in the occasion of the ceremony for the 30 years of the *Fête de la Science* (<https://innovation.ac-guadeloupe.fr/node/23910/view>, last accessed on 24 May 2022): The mention recites « *Pour la 30ème édition de la Fête de la Science, le Ministère de l'Enseignement Supérieur, de la Recherche et de l'Innovation a tenu à marquer l'évènement par l'édition d'une médaille de la Monnaie de Paris. Celle-ci a été remise durant la semaine de la Fête de la Science 2021 à chaque établissement acteur de l'évènement et plus particulièrement à chacun de ceux qui se mobilisent pour transmettre des connaissances au plus grand nombre dans leur territoire. En Guadeloupe, plusieurs acteurs ont ainsi été mis en avant dont le Professeur Roberto Moretti à l'Institut de Physique du Globe et directeur de l'Observatoire de Vulcanologie et de Sismologie de Guadeloupe. Le Comité local de Culture Scientifique a tenu par cette récompense à mettre en avant les actions en faveur de la diffusion de la culture scientifique du Professeur Moretti, et au delà les membres de l'OVSG, et pour leur présence sans faille à la semaine de la fête de la science depuis de nombreuses années* ».

Note: the *Fête de la Science* is an annual French-speaking scientific culture event that takes place over ten days, in October for mainland France and in November for overseas territories and internationally. It was established in 1991 by the *Ministère de l'Enseignement supérieur, de la Recherche et de l'Innovation*. In the French system, the *Rectorat* is the ministerial state service in charge of the application of national educational policies in all schools and Universities of a given territory.

• OTHER WORK EXPERIENCES

February-October 1998 Field Logging Engineer, Wireline Division for Schlumberger (Gabon, Egypt) for training, then French Congo), working in the oil exploration, particularly borehole geophysical logging. I started as Junior Field Engineer, then I made the breakout to Field Engineer. I quitted the company to go back to my PhD research.

In 1996 RM benefitted of two short contracts for scientific collaboration at University of Genoa.

• SUPERVISION OF GRADUATE STUDENTS AND POSTDOCTORAL FELLOWS

PhD Students:

Since 1st October 2020 : Thesis Director and supervisor of Chagnon Glynn: «Physical Geochemistry of a Volcanic Island Hydrothermal System (Guadeloupe, Lesser Antilles): Sources, Dynamics and Precursors of Volcanic Activity”. Doctoral School 560 STEP’UP IPGP (Sciences de la Terre et de l’Environnement et Physique de l’Univers de Paris). The thesis is funded in the frame of the “*Contrats Doctoraux Internationaux - Université de Paris 2020*”, based on a selection of several proposals submitted before launching the call for applications from graduate students.

Dissertation is scheduled for 2023.

Since 1st September 2020: Thesis co-director and co-supervisor of Salomé Pannefieu: «Fluorine and chlorine in glass and melt : implication for volcanology and new-materials », Doctoral School 560 STEP’UP. Dissertation scheduled for 2023.

I have also deeply collaborated to the developments of PhD projects of Marina Alletti (Università di Palermo; defended in 2009; tutor: A. Aiuppa), Charles Le Losq (Univ. Paris VII/IPGP; defended in 2012; director: D. Neuville) and Abigail Metcalfe (Univ. Paris/IPGP; defended in 2022; directors: J.-C. Komorowski, S. Moune).

Pre-doctoral research fellows:

2016-2017 Roberto Schiavone: Dipartimento di Ingegneria Civile, Design, Edilizia e Ambiente, Università della Campania "Luigi Vanvitelli"

Postdocs:

2018-2019 (six months): Guillaume Ucciani IPGP, Interreg PREST funding.

2012 – 2013 (1-year) Valeria Di Renzo: Dipartimento di Ingegneria Civile, Design, Edilizia e Ambiente, Seconda Università degli Studi di Napoli – Aversa (Italy)

2009 – 2010 (1-year) Angela Mormone: Osservatorio Vesuviano, Istituto Nazionale di Geofisica e Vulcanologia, Napoli (Italy)

Master 2 students (F):

10.2 to 24.7. 2020 : Emile Gros, M2 at Sorbonne Université with stage at Univ. Rennes1 and IPGP (co-supervised). Subject : La Soufrière de Guadeloupe hydrogeology and first hydrological assessment using chemical and isotopic tracers.

15.2 - 25.6.2021 : Floriane Lebas, M2 «Risques Naturels» de l'IPGP : "Etude du dégazage et de la dispersion thermique du système hydrothermal du volcan La Soufrière en Guadeloupe: implications pour le suivi volcanique".

2013: Paul Flourey, M2 at IPGP-Université Paris VII (co-supervised). Subject: Obsidian volcanic dome emplacement and degassing

Master 1 students (F):

15.3 - 14.5.2021 : Lorène Boulvais, IPGP M1 STPE - Géologie - FI - Campus GM . Subject : Study of the distal seismicity of La Soufrière de Guadeloupe.

March to May 2022: Nawel Addi, IPGP M1 STPE; Subject: Source deformation and pressure evolution of the long-standing unrest at La Soufrière de Guadeloupe volcano

"Laurea Magistrale" students (I):

2014: Ivan Caiazza SUN-DICDEA (graduated in Civil Engineering with 103/110). Subject: Hydrogeochemistry of pollution by organic solvents.

2015: Aurelio Cinquegrana SUN-DICDEA (graduated in Civil and Environmental Engineering with 110/110 *cum laude*). Subject: Low-Enthalpy Geothermal Energy and Design

2016: Michele Madonna SUN-DICDEA (graduated in Civil Engineering with 110/110 *cum laude*). Subject: Applied Geology and Geophysics

2016: Fabio Buonadonna SUN-DICDEA (graduated in Civil Engineering with 104/110): Applied Geology and Geophysics

2016: Marcello Simeone SUN-DICDEA (graduated in Civil and Environmental Engineering with 105/110). Subject: High-Enthalpy Geothermal Energy and Monitoring

2016: Roberto Schiavone SUN-DICDEA (graduated in Civil and Environmental Engineering with 110/110 *cum laude*). Subject: High-Enthalpy Geothermal Energy and Monitoring

2016: Angelo Orlando Roberto SUN-DICDEA (graduated in Civil Engineering with 101/110). Subject: Geochemical and geophysical modelling of Campi Flegrei unrest

2016: Martina Barbato UniCampania-DICDEA (graduated in Civil Engineering with 110/110 *cum laude*). Subject: Medium-Enthalpy Geothermal Energy and Design

2017: Francesco Esposito UniCampania-DICDEA (graduated in Civil Engineering with 108/110). Subject: Campi Flegrei unrest, risk mitigation and geothermal resources

Co-supervisor of 10 more Master students graduated in Civil Engineering

Undergraduate students:

2018-current: Supervisor of two undergraduate stages (L3) carried out at the OVSG-IPGP

(both for students registered at Université des Antilles)

2013-2017: Supervisor of the Bachelor dissertations of around 30 undergraduate students in Civil and Environmental Engineering at *Università della Campania "L. Vanvitelli"*

Note: in the French system there is no thesis dissertation for obtaining the Bachelor (L3) and Master (M1 and M2) degrees. Students apply for a *stage* of given duration (e.g.; 5 to 6 months for M2, 1 to 2 for M1, 1 for L3) and after writing a short report they discuss their results in front of a university jury. If they wish, students may apply for stages in laboratories and research centres outside their own University. In all cases, a *stage* agreement between parties is demanded. The stage supervisor is therefore the equivalent of the Italian "Relatore di Tesi". Also note that in France the doctoral degree is reserved to PhD.

• TEACHING

University years 2019/2020, 2020/2021, 2021-2022:

8h module about "Modelling in magma geochemistry" Master2 level, master STEP, IPGP.

Although exempted from teaching duties during my stint as OVSG-IPGP director, I wanted to teach this module in October-November every year in Paris (remotely in 2020 due to the pandemic). The 8h module was taught in the frame of the "Geochemical Modelling" course (titular: F. Moynier).

Considering my return to IPGP in Paris in September 2022, after presentation of a Letter of Interest, I am in course of preparing a proposal for an Industrial Chair on "Geothermal Energy and Mineral Resources" to be submitted to the IPGP Scientific Board.

In Italy

2012 to 2017: "Principles of Environmental Geology", Undergraduate course for Civil and Environmental Engineers (DICDEA-Scuola Politecnica of the University); 48h per year

2013 to 2017: "Environmental Geology", Graduate course for Civil Engineers (DICDEA-Scuola Politecnica SUN); 48h per year

2012: "Geosciences for Environmental Characterization and Remediation", undergraduate course in Civil and Environmental Engineering (former Faculty of Engineering, SUN); 56h per year

2011 to 2013 "Laboratory of Modern Physics", Graduate course in Applied Mathematics (former Faculty of Science, SUN), 64h per year

2007 to 2009 (as external contract professor) "Thermochemistry of magmatic systems", Università di Genova; 20h per year

Master-level course in "Geochemistry" (18h, SiMoNa project, INGV, year 2003), finalized to the formation of technical experts and industrial researchers

Master-level course in "Mineralogy and Geochemistry for Environmental Remediation" (20h, DiMoDi project, SUN-DICDEA, year 2013), finalized to the formation of technical experts and industrial researchers

• ORGANISATION OF SCIENTIFIC MEETINGS (MAIN EVENTS)

Organisation and scientific coordination of meetings:

-Member of the International Scientific Committee of the "4th International Electronic Conference on Geosciences (IECG 2022)", electronic conference for the journal

- Geosciences, 1-15 December 2022 (online)
- Member of the International Scientific Committee of the 23rd General Meeting of the International Mineralogical Association (IMA 2022 : Mineralogy and Space), Lyon, 18-22 July 2022.
 - Member of the Scientific Committee of the Caribbean Science and Innovation Meeting, Le Gosier, 19-22 October 2019, in charge the "Natural Risks" theme.
 - Member of the scientific committee of the joint congress SGI-SIMP (Società Geologica Italiana –Società Italiana di Mineralogia e Petrologia) « The future of geosciences, the geosciences of future », Milan, September 2014.
 - SoGel (*Società Italiana di Geochimica*) delegate for the organization of the Goldschmidt conference in Florence (2013) and member of the local organizing committee.
 - Coordinator of Theme 8 (with Daniel Neuville): "Melts, and Magmas glasses: from properties to processes", Goldschmidt 2013 (Florence, 25-30 August 2013).
 - Co-organiser of the congress "5th Natural glasses (Glasses and melts from natural conditions to industrial process)", workshop satellite of the Goldschmidt 2013, 22-24 August 2013, Firenze (I)
 - Member of the International Scientific Committee of the Goldschmidt 2012, Montreal(CA) and coordinator of Theme 4: "Ocean Ridge and Intraplate Volcanism: deep mantle supply, tectonic-magmatic processes, and ore deposits through time"
 - Convener and organizer with D.B. Dingwell and P. Richet of the 8th Silicate Melt Workshop (1-5 October 2007), La Petite Pierre (Strasbourg, France).
 - Organizer of the EU-RTN Short Course "The role of volatiles in volcanic processes" (INGV-Naples, Janvier 2004), in the frame of EU FP5 Research Training Network Programme "Volcano Dynamics in relation to monitoring, hazard mitigation and volcano crisis response".
 - Proposer and organizer of the Exploratory Workshop of the European Science Foundation (ESF) and INGV "Gases in Magmatic Evolution: from depth to atmosphere, from micro to macro-scale, from calculation to observation", Rome (11-13-May, 2003).

Organisation of scientific sessions at major conferences:

- Session on "redox in Mineralogy and Geochemistry", forthcoming IMA 2022
- Sessions V23B-I et V23B-II (Nicklas, Moretti, Aulbach, Planavsky) "Oxygen Fugacity and Redox Mechanisms in High- to Low-Temperature Geochemical Processes", 2019 AGU Fall Meeting, 7-13 December 2019, San Francisco
- Session 07k (Moretti, Neuville) "Linking the Redox State of Silicate Melts to Magmatic Processes", Paris, Goldschmidt 2017, 13-18 August 2017.
- Session 17e (Economos, Longpré, Edmonds, Moretti): "Sulfur: Trace but Mighty in Redox, Degassing, Magmatic Processes, and Mineralization", -GOLDSCHMIDT2015 Prague (CZ) 16-21 August 2015
- Session (Di Muro, Burton, Balcone-Boissard, Capponi, de' Michieli Vitturi, Montanaro, Esposti Ongaro, Moretti) "Magma ascent, degassing and eruptive dynamics (co-sponsored by the VGP section of AGU)", EGU, 12-17 April 2015, Vienna (A).
- Session (Henderson, Neuville, Moretti) "Melts under extreme conditions", IMA 2014, 1-5 September 2014 Johannesburg (SA).
- Session V024 (Mètrich, Cashman, Moretti, Neuville) "Magma properties, magma degassing behavior and post eruptive volatile modifications", 2012 AGU Fall Meeting, San Francisco, USA, 3-7 December 2012
- Session (Moretti, Neuville) "Melts and Glasses: From Deep Earth Interiors over Environmental Applications to Volcanological and Geophysical Challenges" (Theme 20: Frontiers in mineralogy and mineral Physics), Goldschmidt 2011 (Prague; 14-19 August 2011)

- session GMPV1 (Moretti, Wilke, Neuville, Perugini, De Campos) "Formation, evolution and properties of Melts and Magmas: from lab to Nature", EGU2010 Vienne, May 2010
- session (Kelley, Moretti) "Volatiles in subduction zone magmas: from the slab to the surface", Goldschmidt 2009 (Davos, Switzerland), 20-26 June 2009.
- session GMPV12 (Pokrovski, Moretti) "Fluid-melt-mineral interactions in nature and experiments: thermodynamic, kinetic and structural controls", European Geoscience Union (EGU) Assembly, 19-24 April 2009, Vienna (A).
- Session GMPV12 (Moretti, Wilke) Redox signature of minerals, melts and glasses: analysis, experiments and models", European Geoscience Union (EGU) Assembly, 13-18 April 2008, Vienna (A).
- Session VGP2 (Moretti, Richet) EGU 2005 "Physics, Chemistry and Rheology of Silicate Liquids, Glasses and Multiphase Magmas", Vienne (A), EGU 2005, 24-29 April 2005.
- Session VGP2 (Moretti, Kohn) "Physics and Chemistry of Silicate Liquids, Glasses and Multiphase Magmas", European Geoscience Union (EGU) 2004, Nice (F), April 2004.

• EDITORIAL ACTIVITY

Books:

October 2021: AGU Geophysical Monograph 266 «Magma Redox Geochemistry », edited by R MORETTI et D Neuville, published by John Wiley and sons, 436 pp. ISBN: 978-1-119-47325-1

Journals:

In progress: Geosciences MDPI special issue "The observatories of the Future, the future of Observatories", edited by MORETTI R.-and Di Muro A.

2020 : issue 16/3 of ELEMENTS : « The redox engine of Earth », by MORETTI R., Cicconi M.R. and Neuville D.

Since 2020: Academic Editor for Geosciences MDPI

2009 – 2014: Topical Editor of Solid Earth, open access journal of the European Geosciences Union (EGU).

2008 – 2017: Editorial Advisory Board of Chemical Geology.

2013 – 2014: Associate editor of American Mineralogist for the glass/magma/inclusions issues (closed)

2008: 1st guest Editor with D.B. Dingwell and P. Richet for Chemical Geology: "8th Silicate Melt Workshop", (2008) vol. 56/3-4.

2006: 1st guest Editor with P. Richet and J.F. Stebbins for Chemical Geology "Physics, chemistry and rheology of silicate liquids, glasses and multiphase magmas", (2006) 229/1-3.

2005: 1st guest Editor with M.R. Carroll, P. Papale, C. Textor et P. Allard) for Annals of Geophysics: "Gases in Magmatic Evolution: from depth to atmosphere, from micro- to macroscale, from observation to calculation", (2005) vol. 48/4-5.

Reviewer for a large number of international journals (e.g., Nature Geoscience, EPSL, GCA, Chemical Geology, G3, JVGR, JGR, Frontiers and many more)

• RESPONSIBILITIES AND COMMISSIONS

Institutional/administratives/decisional:

Since 2018: *Directeur et Resp. scientifique*, Observatoire Volcanologique et Sismologique de

Guadeloupe/IPGP

As few examples of my activity, under this cap I represent the IPGP in Guadeloupe, in charge of the seismic and volcanic (La Soufrière volcano) surveillance. I coordinate operations and monitoring strategies, I advise the local (*Département 971, Région Guadeloupe* and other statutory bodies) and State (Préfet, Civil Defense) authorities and inform via the medias the population about ongoing geophysical phenomena. I have contributed to the finalization of the "ORSEC" (*Organisation de la Réponse de Sécurité Civile*) Volcano Plan, approved and adopted by the prefect of Guadeloupe, and I have participated in several meetings preparatory to the decree n° 2019/001 CAB SIDPC of January 2019, which instituted a regulated access to the summit of the Soufrière volcano, based on the identification of a security perimeter and the prohibition on any unauthorized person to cross it. Being the Observatory a major scientific actor of the territory, I participate to the numerous activities and meetings for the promotion of Science and research programming in coordination with all the other actors and authorities, including the central state ones (e.g., the former University Minister, the State Council President etc) and members of Senate and Deputy chambers involved in planning the laws to face natural risks in the French overseas territories.

Since May 2022: member of the *Conseil d'Administration de l'UFR(*) des Sciences Exactes et Naturelles de l'Université des Antilles* representing the OVSG-IPGP, which was asked to join the *Conseil*. (*) : The UFR is somehow the equivalent of the former Italian "Facoltà".

Since January 2022 : member of the *Conseil d'Administration de l'Université des Antilles (UA)* representing OVSG-IPGP, which was voted as one of the research bodies joining the University CdA. Also member of the *Conseil du Pole Guadeloupe du Conseil d'Administration de l'UA*.

Since January 2022 : Member of the *Comité Experts en Volcanologie IPGP* as both expert in geochemistry and volcanology and OVSG-IPGP director.

December 2020 - April 2021: Invited member of the Caribbean Disaster Emergency Management (CDEMA) for the needs of coordinating at the Antilles scale the risk management related to the eruption of the Soufrière de St. Vincent (St. Vincent, Lesser Antilles).

Since 2020 : Member of the *Comité Stratégique du Consortium de la Politique Antilles Recherche et Innovation (PARI)*

Since 2018: Member of the *Conseil Départemental de Sécurité Civile de la Guadeloupe (arrêté n. 2015-93 du préfet de la Région Guadeloupe)*

Since 2018 : Member of the *Commission Administrative de suivi du PER Géothermie (arrêté DEAL 22/10/2018)*

2013-2018 : Member "by merit" in the Board of the newly activated School of Doctorate in "Design, Innovation and Environment" at Dipartimento di Ingegneria Civile, Design, Edilizia e Ambiente, SUN/Università della Campania "L. Vanvitelli".

2013-2016 : Member of the Directorial Board (*Giunta*) of the Dipartimento di Ingegneria Civile, Design, Edilizia e Ambiente, Seconda Università di Napoli/Univ. Campania "L. Vanvitelli", Italy, as representative of the Associate Professors.

2005-2009: Member (as scientific/academic expert) of the Technical Committee of the *Autorità di Bacino Destra Sele* (based on the decree of the President of the Campania Region, I)

Expert advices:

4 December 2020: scientific expert in the IPGP panel that evaluated the Mt. Pelée (Martinique) volcanic unrest and switched from “green” to “yellow” (volcanic unrest/reactivation) the Pelée alert level on 4 December 2020.

2018 : Expert advice for DEAL/Préfecture giving recommendations about geothermal drilling in the La Soufrière area (PER *pour gites géothermiques dit « Vieux Habitants »*). DEAL stands for *Directions de l'Environnement, de l'Aménagement et du Logement* and is public body under multimministerial jurisdiction for state services (particularly risk and environment) in French overseas territories.

Science promotion, scientific societies, steering committees:

Since 2019 : Member of the Steering Committe of the project INTERREG PREST (led by OVSM-IPGP)

- Since 2019 : Member of the *Comité de Pilotage « Sismik »*, DEAL Guadeloupe/Préfecture

- Since 2019 : Member of the *Comité de Pilotage* of the *Office de l'Eau de Guadeloupe*

- Since 2018 : Member of the *Comité de Pilotage* of the initiative Paré to Paré, *Croix Rouge*

- Since 2018 : Member of the *Comité de Pilotage* de la *Fête de la Science*

- Since 2016 : Member of the « Commission on Mineral Physics » of the International Mineralogical Association (IMA).

- 2013: Expert advice for ANVUR (*Agenzia Nazionale per la Valutazione Universitaria e della Ricerca*) for the VQR (evaluation of the public research quality) 004-2010

2016: Expert advice for ANVUR (*Agenzia Nazionale per la Valutazione Universitaria e della Ricerca*) for the VQR (public research quality) 2011-2015

2014: Member of the Scientific and Coordination Committee of the University High Formation project "Experts in the domain of novel methods for the remediation of contaminated soils", DICDEA-SUN

2007-2015: Councillor of the Italian Society of Geochemistry (SOGEI)

2007 – 2011: Program Chair of the European Geosciences Union (EGU), as Officer for Geochemistry, Geochemistry-Mineralogy-Petrology-Volcanology (GMPV) division.

Hiring:

2011: Member of the public selection jury for one post-doc position, Univ. della Campania L. Vanvitelli, Italie

2011 Member of the public selection jury for one researcher (CDD) position, Osservatorio Vesuviano, INGV

Many times member of the public selection committees for post-doc, research fellowships and job contracts at Osservatorio Vesuviano-INGV between 2000 and 2011

Many times leading interviews to hire non-permanent candidates to OVSG-IPGP positions (post-doc and engineer or technician grades).

PhD Juries :

2021 : *Examineur* in the Jury de Thèse (French PhD) of Luca Terray (Doctorat Sciences

Fondamentales, Laboratoire Magmas-Volcans, Université de Clermont-Auvergne)

2015 : *Rapporteur* in the Jury de Thèse (French PhD) of Isabelle Tannou (Doctorat Sciences de la Terre, Institut de Physique du Globe, Paris-Sorbonne Cité)

2013 : *Examineur* in the Jury de Thèse (French PhD) of Charles Le Losq (Doctorat Sciences de la Terre, Institut de Physique du Globe, Paris-Sorbonne Cité)

2011: Member of the public selection committee for the admission at the Phd course (XXV cycle) in Earth Sciences – Geochemistry, University of Palermo.

2008 : *Examineur* in the Jury de Thèse (French PhD) of Priscille Lesne (Doctorat Sciences de l'Univers, Université d'Orléans)

Member of the « *comité de pilotage de Thèse* » (each French PhD project has a steering committee) of Géraldine Zdanowicz (IPGP, Univ. Paris VII, 2010-2013), Charles Le Losq (IPGP, Univ. Paris VII in 2009-2012), Eteinne Leglasn IPGP, Univ. Paris Cité, 2019-2022), Adrien Donatini (IPGP, Univ. Paris Cité, 2021-2024), Loris Piolat (Univ. Nancy, 2021-2024).

• MEMBERSHIPS OF SCIENTIFIC SOCIETIES (current)

IAVCEI, SIMP, AGU, USTV

• FUNDED PROPOSALS AND CONTRACTS

Principal Investigator/WP-leader/Research Unit responsible/Contract referent:

PI of the 4-years ANR (Agence Nationale de la Recherche) 2022 “USB-MAC” ; 3 Research Units. *Submitted (passed phase 2; waiting for final project ranking for funding)*

WP4 leader of the 4-years ANR 2022 “VoltMELTS” (PI: C. Le Losq, IPGP); 3 Research Units. *Submitted (passed phase 2; waiting for final project ranking for funding)*

2020 CNRS-INSU TELLUS/Aléas project “Back to the magmatic source and progress in unrest science: Innovative techniques for hydrothermal chemical filtering” (1-year)

2020 : IPGP responsible of the contract « Office de l’Eau 971 / IPGP » for two-years funding.

2020_2022 : Co-leader (with S. Moune) of WP1 « *Emissions volcaniques* » in the project PO-FEDER « *Impact Multi-Environnemental des Retombées volcaniques et sahariennes en Guadeloupe* » (IMMERGE ; PI : C. Dessert), started in January 2020

2018: PI for the *Appel Offre IPGP-2018* “Depth to surface propagation of fluid-related anomalies at La Soufrière de Guadeloupe volcano (FWI): timing and implications for volcanic unrest” (1-year)

2016 INGV Napoli - DICDEA contract for “geothermal simulations finalized to geothermal exploitation” at Campi Flegrei.

2015 INGV Napoli -DICDEA contract for the “reappraisal of geochemical and geophysical data at Campi Flegrei”

2013 : FP7 “Mediterranean Supersite Volcanoes” (MED-SUV), appointed as local coordinator of AMRA S.c.a.r.l. (formerly Competence Center of Regione Campania) research unit (WP3, WP4 and WP6). In 2014 I resigned because of a major surgery problem and its drawbacks.

- 2011-2013: PRIN, year 2009, about endogenous CO₂-dominated gases and their role on the magmatic process. Responsible of one of the two research units; PI: Mariano Valenza (Univ. Palermo)
- 2008-2010: PRIN, year 2007, about thermodynamics of magmatic degassing. Responsible of one of the three research units; PI: Claudia Romano (Univ. Roma 3)
- 2005-2007: INGV-*Dipartimento Protezione Civile* project “V3_6 Etna”. Research Unit responsible and Coordinator of Task 2 “Physical and chemical properties of magma and volcanic rocks” (4 RUs)
- 2005: LR5 *Regione Campania*, year 2002, about mixing properties and viscosity of silicate melts. Single research unit
- 2003: European Science Foundation (ESF), “Gases in Magmatic Evolution: from depth to atmosphere, from micro to macro-scale, from calculation to observation”, peer reviewed and finalized to workshop activity held in May 2013 in Rome
- Participant in other several research projects since 1997. Here I quote the following:
VUELCO FP7 on volcanic unrest (2010-2013, Bristol University coordinator)
H2020 EUROVOLC networking (closed in 2022)
InterReg Caraibe PREST (closed in 2022)
ANR Mygale (started in 2022)

• LIST OF PUBLICATIONS AND BIBLIOMETRY

Google: 4507 total citations, h Index: 37

ResearchGate: 4042 total citations, h-index: 35

Scopus: 3567 total citations (by 2194 documents), h-index: 35

Journal Articles (ISI-JCR) (in chronological order)

- P1) MORETTI R. and G. Ottonello (1998). An appraisal of endmember energy and mixing properties of rare earth garnets. *Geochimica et Cosmochimica Acta*, 62, 1147-1173.
- P2) Ottonello G. and MORETTI R. (1998). On the significance of static interactions in silicate garnets. *Journal of Physics and Chemistry of Solids*, 59, 893-901.
- P3) Ottonello G., MORETTI R., Marini L. and Vetuschi Zuccolini M. (2001). Oxidation state of iron in silicate glasses and melts: a thermochemical model. *Chemical Geology*, 174, 157-179.
- P4) MORETTI R. and Ottonello G. (2003a). A polymeric approach to the sulfide capacity of silicate slags and melts. *Metallurgical and Materials Transactions B* 34B, 399-410.
- P5) MORETTI R., Ottonello G. (2003b). Polymerization and disproportionation of iron and sulfur in silicate melts: insights from an optical basicity-based approach. *Journal of Non-Crystalline Solids*, 323, 111-119.
- P6) Ottonello G. and MORETTI R. (2004). Lux-Flood basicity of binary silicate melts. *Journal of Physics and Chemistry of Solids*, 65, 1609-1614.
- P7) MORETTI R. and Papale P. (2004). On the oxidation state and volatile behavior in multicomponent gas-melt equilibria. *Chemical Geology*, 213, 265-280.
- P8) MORETTI R. and Ottonello G.. (2005). Solubility and speciation of sulfur in silicate melts: the Conjugated-Toop-Samis-Flood-Grjotheim (CTSFG) model. *Geochimica et Cosmochimica Acta*. 69, 801-823.

- P9) MORETTI R. (2005). Polymerisation, basicity, oxidation state and their role in ionic modelling of silicate melts. *Annals of Geophysics*, 48, 4/5, 583-608.
- P10) Papale P., MORETTI R., Barbato D. (2006). The compositional dependence of the saturation surface of H₂O+CO₂ fluids in silicate melts. *Chemical Geology*, 229, 78-95.
- P11) Chiodini G., Caliro S., Caramanna G., Granieri D., Minopoli C., MORETTI R., Perrotta L. (2006). Geochemistry of the submarine gaseous emissions of Panarea (Aeolian Islands, Southern Italy): magmatic vs hydrothermal origin and implications for volcanic surveillance. *Pure Appl. Geophysics*, 163, 759-780
- P12) Quarenì F., MORETTI R., Piochi M., Chiodini G. (2007). Modeling of the thermal state of Mt. Vesuvius from 1631 AD to present and the role of CO₂ degassing on the volcanic conduit closure after the 1944 AD eruption. *Journal of Geophysical Research – Solid Earth*, 112, pp. B03202,
- P13) Caliro S., Chiodini G., MORETTI R., Avino R., Granieri D., Russo M., Fiebig J. (2007). The origin of La Solfatara fumaroles (Campi Flegrei, South Italy). *Geochimica et Cosmochimica Acta*, 71, 3040-3055.
- P14) Aiuppa A., MORETTI R., Federico C., Giudice G., Guerrieri S., Liuzzo M., Papale P., Shinohara H., and Valenza M. (2007). Forecasting Etna eruptions by real-time observation of volcanic gas composition. *Geology*, 35, 1115-1118.
- P15) Gaspar M., Knaack C., Meinert L., MORETTI R. (2008). REE in Skarn Systems: A LA-ICP-MS study of garnets from the Crown Jewel Gold Deposit. *Geochimica et Cosmochimica Acta*, 72, 185-205.
- P16) MORETTI R. and Baker D.R. (2008). Modeling of the interplay of fO₂ and fS₂ along the FeS-Silicate Melt equilibrium. *Chemical Geology*, 256, 286-298. doi: 10.1016/j.chemgeo.2008.06.055.
- P17) Mangiacapra A, MORETTI R., Rutherford M., Civetta L., Orsi G., Papale P. (2008). The deep magmatic system of the Campi Flegrei caldera (Italy). *Geophysical Research Letters*, 35, L21304
- P18) Aiuppa A., Federico C., Giudice G., Giuffrida G., Guida R., Guerrieri S., Liuzzo M., MORETTI R. and Papale P. (2009). The 2007 eruption of Stromboli volcano: insights from real-time measurement of the volcanic gas plume CO₂/SO₂ ratio. *Journal of Volcanology and Geothermal Research*. 189, 221-230
- P19) Alletti M., Baker D.R., Scaillet B., Aiuppa A., MORETTI R., Shi L., Ottolini L. (2009). Chlorine partitioning between a basaltic melt and H₂O-CO₂ fluids. *Chemical Geology*, 263, 37-50.
- P20) Barsanti M., Papale P., Barbato D., MORETTI R., Hauri E., Boschi E., Longo A. (2009). Heterogeneous large total CO₂ abundance in the shallow magmatic system of Kilauea volcano, Hawaii. *Journal of Geophysical Research-Solid Earth*, 114, B12201, doi:10.1029/2008JB006187.
- P21) Arienzo I., MORETTI R., Civetta L., Orsi L., Papale P. (2010) The feeding system of the Agnano-Monte Spina eruption (Campi Flegrei, Italy): dragging the past into present activity and future scenarios. *Chemical Geology*, 270, 135-147, doi:10.1016/j.chemgeo.2009.11.012.
- P22) Edmonds M., Aiuppa A., Humphreys M., MORETTI R., Giudice G., Martin R., Herd R.A., Christopher T. (2010). Excess volatiles supplied by mingling of mafic magma at an andesitic arc volcano. *Geophysics, Geochemistry, Geosystems*, Q04005.
- P23) Aiuppa A., Bertagnini A., Métrich N., MORETTI R., Di Muro A., Liuzzo M. and Tamburello G. (2010) A degassing model for Stromboli volcano. *Earth and Planetary Science Letters*, 295 (2010) 195–204.
- P24) Chiodini G., Caliro S., Aiuppa A., Avino R., Granieri D., MORETTI R., Parello F. (2011) First ¹³C/¹²C isotopic characterisation of volcanic plume CO₂. *Bulletin of Volcanology*, 73, 531-542.

- P25) Pino N.A., MORETTI R., Allard P. and Boschi E. (2011) Seismic precursors of a basaltic paroxysmal explosion track deep gas slug upraise. *Journal of Geophysical Research-Solid Earth*, 116, 16, B02312.
- P26). Oppenheimer C., MORETTI R., Kyle P., Eschenbacher A., Lowenstern J., Hervig G, Dunbar N. (2011) Mantle to surface gas trigger of the alkalic intraplate Erebus volcano, Antarctica. *Earth and Planetary Science Letters*, 306, 261-271.
- P27). Mormone A., Piochi M., Bellatreccia F., De Astis G., MORETTI R., Della Ventura G., Cavallo A., Mangiacapra A. (2011) A CO₂ -rich magma source beneath the Phlegraean Volcanic District (Southern Italy): Evidence from a melt inclusion study. *Chemical Geology* 287, 66-80.
- P28). Baker D.R., MORETTI R. (2011) Modeling the solubility of sulfur in magmas: a 50-year old geochemical challenge. *Reviews in Mineralogy and Geochemistry*, 58, 167-213.
- P29). Marini L., MORETTI R., Accornero M. (2011) Sulfur isotopes in magmatic-hydrothermal systems, melts, and Magma. *Reviews in Mineralogy and Geochemistry*, 58, 423 – 492.
- P30). Aiuppa A., Shinohara H., Tamburello G., Giudice G., Liuzzo M., MORETTI R. Hydrogen in the gas plume of an open-vent volcano (Mt. Etna, Italy) (2011). *Journal of Geophysical Research – Solid Earth*, 116, B10204, doi:10.1029/2011JB008461.
- P31). Le Losq, Neuville D., MORETTI R., Roux J. (2012) Determination of Water Content in Silicate Glasses using Raman Spectrometry, with application to explosive volcanism. *American Mineralogist*, 97, 779-790.
- P32) MORETTI R., Arienzo I., Civetta L., Orsi G, D'Antonio M. (2013a) The deep plumbing system of the Ischia island: a physico-chemical window on the fluid-saturated and CO₂-sustained Neapolitan volcanism (Southern Italy). *Journal of Petrology*, 54, 951-984
- P33) MORETTI R., Arienzo I., Civetta L., Orsi G., Papale P. (2013b) Multiple magma degassing sources at an explosive volcano. *Earth and Planetary Sciences Letters*, 367, 95-104
- P34) D'Antonio M., Tonarini S., Arienzo I., Civetta L., Dallai L., MORETTI R., Orsi G., Andria M., Trecalli A. (2013). Discerning mantle and crustal processes within the Roman Province: insights from mineralogy, geochemistry, and Sr-Nd-O isotopes of young hybrid volcanics from the Ischia island (South Italy). *Contributions to Mineralogy and Petrology*, 165, 1173-1194.
- P35) Le Losq C., MORETTI R. and Neuville D.R. (2013) On the speciation and amphoteric behavior of water in aluminosilicate melts and glasses: High-Temperature Raman spectroscopy and reaction equilibria. *European Journal of Mineralogy*, 25, 777–790, <http://dx.doi.org/10.1127/0935-1221/2013/0025-2322>
- P36) Capuano P., Russo G., Civetta L., Orsi G., D'Antonio M., MORETTI R. (2014) The active portion of the Campi Flegrei caldera structure imaged by 3D inversion of gravity data. *G3*, 14/10, 4681-4697 doi: 10.1002/ggge.20276
- P37) MORETTI R., Neuville D.R., Le Losq C. (2014) The amphoteric behavior of water in silicate melts from the point of view of their ionic-polymeric constitution., *Chemical Geology*, 367, 23-33,
- P38) Brown RJ, Civetta L, Arienzo I, D'Antonio M, MORETTI R, Orsi G, Tomlinson EL, Albert PG, Menzies MA (2014). Geochemical and isotopic insights into the assembly, evolution and disruption of a magmatic plumbing system before and after a cataclysmic caldera-collapse eruption at Ischia volcano (Italy). *Contributions to Mineralogy and Petrology*, 168, ISSN: 0010-7999, doi: 10.1007/s00410-014-1035-1
- P39) Le Losq C, Neuville DR, MORETTI R, Kyle PR, Oppenheimer C (2015). Rheology of phonolitic magmas - the case of the Erebus lava lake. *Earth and Planetary Science Letters*, 411, 53-61, ISSN: 0012-821X, doi: 10.1016/j.epsl.2014.11.042
- P40) Marotta E., Calvari S., Cristaldi A., D'Auria L., Di Vito M.A., MORETTI R., Peluso R., Spampinato L., and Boschi E. (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.

- P41) Arienzo I., Mazzeo F.C., MORETTI R., Cavallo A, D'Antonio M. (2016) Open-system magma evolution and fluid transfer at Campi Flegrei caldera (Southern Italy) during the past 5 ka as revealed by geochemical and isotopic data: The example of the Nisida eruption *Chemical Geology*, 427 (2016) 109–124.
- P42) Aiuppa A., Lo Coco E., Liuzzo M., Giudice G., Giuffrida G., MORETTI R. (2016). Terminal Strombolian activity at Etna's central craters during summer 2012: The most CO₂-rich volcanic gas ever recorded at Mount Etna. *Geochemical Journal*, 50, doi:10.2343/geochemj.2.0395
- P43) de Moor J.M., Aiuppa A., Averd G., Wehrmann H., Dunbar N., Muller C., Tamburello G., Giudice G., Liuzzo M., MORETTI R., Conde V., Galle B. (2016). Turmoil at Turrialba volcano (Costa Rica): Degassing and eruptive behavior inferred from high frequency gas monitoring. *Journal of Geophysical Research – Solid Earth*, 121(8), 5761-5775.
- P44) Di Renzo V, Wohletz K, Civetta L, MORETTI R, Orsi G, Gasparini P (2016). The Thermal Regime of the Campi Flegrei Magmatic System Reconstructed Through 3D Numerical Simulations. *Journal of Volcanology and Geothermal Research*, 328, 210-221.
- P45) Montanaro, C., Scheu, B., Mayer, K., Orsi, G., MORETTI, R., Isaia, R., & Dingwell, D. B. (2016). Experimental investigations on the explosivity of steam-driven eruptions: A case study of Solfatara volcano (Campi Flegrei). *Journal of Geophysical Research: Solid Earth*, 121(11), 7996-8014.
- P46) MORETTI R., De Natale G., Troise C. (2017) A geochemical and geophysical reappraisal to the significance of the recent unrest at Campi Flegrei caldera (Southern Italy). *G3*, 18(3), 1244-1269.
- P47) Fedele, A., Pedone, M., MORETTI, R., Wiersberg, T., Somma, R., Troise, C., & De Natale, G. (2017). Real-time quadrupole mass spectrometry of hydrothermal gases from the unstable Pisciarelli fumaroles (Campi Flegrei): Trends, challenges and processes. *International Journal of Mass Spectrometry*, 415, 44-54.
- P48) De Natale, G., Troise, C., Kilburn, C.R., Somma, R., and MORETTI, R. (2017). Understanding volcanic hazard at the most populated caldera in the world: Campi Flegrei, Southern Italy. *Geochemistry, Geophysics, Geosystems* 18
- P49) Aiuppa, A., Bitetto, M., Francofonte, V., Velasquez, G., Bucarey Parra, C., Giudice, G., Liuzzo M., MORETTI R., Moussallam Y., Peters N., Tamburello, G., Valderrama A., Curtis A. (2017). A CO₂-gas precursor to the March 2015 Villarrica volcano eruption. *Geochemistry, Geophysics, Geosystems*, 18, doi:10.1002/2017GC006892.
- P50) Barbato M., Cirillo L., Menditto L., MORETTI R., Nardini S. (2017) Geothermal energy application in Campi Flegrei Area: The case study of a swimming pool building. *Int. Journal of Heat and Technology*. 35, S102-S107,
- P51) Pedone M., Granieri D., MORETTI R., Fedele A., Troise C., Somma R., De Natale G. (2017) Improved quantification of CO₂ emission at Campi Flegrei by combined Lagrangian Stochastic and Eulerian dispersion modelling. *Atmospheric Environment*, 170, 1-11, <https://doi.org/10.1016/j.atmosenv.2017.09.033>
- P52) Aiuppa A., de Moor J. M., Arellano S., Coppola D., Francofonte V., Galle B., Giudice G., Liuzzo M., Mendoza E., Saballos A., Tamburello G., Battaglia A., Bitetto M., Gurrieri S., Laiolo M., Mastrolia A, MORETTI R. (2018) Tracking Formation of a Lava Lake From Ground and Space: Masaya Volcano (Nicaragua). *Geochemistry, Geophysics, Geosystems*, doi:10.1002/2017GC007227.
- P53) MORETTI R., Métrich, N., Arienzo I., Di Renzo V., Aiuppa A., Allard P. (2018a) Degassing vs. eruptive styles at Mt. Etna volcano (Sicily, Italy). Part I: Volatile stocking, gas fluxing, and the shift from low-energy to highly explosive basaltic eruptions. *Chemical Geology* 482, 1-17. <https://doi.org/10.1016/j.chemgeo.2017.09.017>
- P54) MORETTI, R., Troise, C., Sarno, F., & De Natale, G. (2018b). Caldera unrest driven by CO₂-induced drying of the deep hydrothermal system. *Scientific reports*, 8(1), 8309.

- P55) Barbato M., Cirillo L., Menditto L., MORETTI R., Nardini S. (2018) Feasibility study of a geothermal energy system for indoor swimming pool in Campi Flegrei Area. *Thermal Science and Engineering Progress* 6, 421-425.
- P56) MORETTI R, Arienzo I, Di Renzo V, Orsi G, Arzilli F, Brun F, D'Antonio M (2019) Volatile segregation and generation of highly vesiculated explosive magmas by volatile-melt fining processes: The case of the Campanian Ignimbrite eruption. *Chemical Geology* 503, 1-14
- P57) Troise, C., De Natale, G., Schiavone, R., Somma, R., and MORETTI, R. (2019). The Campi Flegrei caldera unrest: Discriminating magma intrusions from hydrothermal effects and implications for possible evolution. *Earth-Science Reviews*, 188, 108-122.
- P58) Tamburello G, Moune S, Allard P, Venugopal S, Robert V, Rosas-Carbajal M, Ucciani G, Deroussi S, Kitou T, Didier T, Komorowski J-C, Beauducel F, de Chabalier J-B, Lemarchand A., Dessert C., MORETTI R. (2019) Spatio-temporal relationships between fumarolic activity, hydrothermal fluid circulation and geophysical signals at an arc volcano in degassing unrest: La Soufrière of Guadeloupe (French West Indies). *Geosciences*, 9(11) 480
- P59) Schiavone R., De Natale G., Borgia A., Troise C., MORETTI R., Somma R. (2020) Seismogenic potential of withdrawal-reinjection cycles: numerical modelling and implication on induced seismicity. *Geothermics* 85, 101770
- P60) MORETTI R., Komorowski JC, Ucciani G, Moune S, Jessop D, de Chabalier JB, Beauducel F, Bonifacie M, Burtin A, Vallée M, Deroussi S, Robert V, Gibert D, Didier T, Kitou T, Feuillet N, Allard P, Tamburello G, Shreve T, Saurel JM, Lemarchand A, Rosas-Carbajal M, Agrinier P, Le Friant A, Chaussidon M. (2020) The 2018 unrest phase at La Soufrière of Guadeloupe (French West Indies) andesitic volcano: scrutiny of a failed but prodromal phreatic eruption. *J. Volcanol. Geotherm. Res.*, 393, 106769.
- P61) Le Losq C, MORETTI R, Oppenheimer C., F. Beauducel and Neuville D (2020) In situ XANES study of the influence of varying temperature and oxygen fugacity on iron oxidation state and coordination in a phonolitic melt. *Contrib Min Petrol* 411, 53-61.
- P62) Cicconi MR, MORETTI R and Neuville DR (2020) Earth' Electrodes. *Elements: An International Magazine of Mineralogy, Geochemistry, and Petrology* 16.3, 157-160
- P63) Cicconi MR, Le Losq C, MORETTI R and Neuville DR (2020) Magmas are, the Largest Repositories and Carriers of Earth's Redox Processes *Elements: An International Magazine of Mineralogy, Geochemistry, and Petrology* 16.3, 173-178
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- P65) MORETTI R., Moune S., Robert V., Jessop D., Didier T., Bonifacie M. and Komorowski JC. (2020) Intercomparison of geochemical techniques at La Soufrière de Guadeloupe (FWI) volcano: their advantages and their limits over a long-standing unrest. *Italian Journal of Geosciences* 139, doi.org/10.3301/IJG.2020.13.
- P66) Saurel JM, Corbeau J, Deroussi S, Didier T, Lemarchand A, Moune S., Lynch L., Le Jeune AM, MORETTI R, Komorowski JC., (2020), Building a natural-hazard resilient high-quality seismic network: how WI network sustained hurricanes Maria and Irma. *Seismological Res. Lett.*, 92, 77-84
- P67) Jessop DE, Moune S, MORETTI R, Gibert D, Komorowski JC, Robert V, Heap M, Bosson A, Bonifacie M, Deroussi S, Dessert C, Rosas-Carbajal M, Lemarchand A, Burtin A. A multi-decadal view of the heat and mass budget of a volcano in unrest: La Soufrière de Guadeloupe (French West Indies). *Bulletin of Volcanology*, 83, 1-19.
- P68) Falcin A., Métaixian J.P, Mars J., Stutzmann E., Komorowski J.-C., MORETTI R., Malfante M., Beauducel F., Saurel J.M., Dessert C., Burtin A., Ucciani G., de Chabalier J.-B., Lemarchand A. A machine learning approach for automatic classification of volcanic seismicity at La Soufrière volcano, Guadeloupe. (2020) *Journal of Volcanology and Geothermal Research*, 107151.

- P69) Metcalfe A., Moune S., Komorowski J. C., Kilgour G., Jessop D. E., Legendre Y., and MORETTI R. (2021). Magmatic Processes at La Soufrière de Guadeloupe: Insights from Crystal Studies and Diffusion Timescales for eruption onset. *Frontiers in Earth Science*, 9, 78.
- P69bis) Metcalfe A., Moune S., Komorowski J. C., Kilgour G., Jessop D. E., MORETTI R., and Legendre Y. Corrigendum: Magmatic Processes at La Soufrière de Guadeloupe: Insights from Crystal Studies and Diffusion Timescales for eruption onset. *Frontiers in Earth Science*, 664
- P70) Massaro S., Dioguardi F., Sandri L., Tamburello G., Selva J., Moune S., Jessop D., MORETTI R., Komorowski J.C.K., Costa, A. (2021). Testing gas dispersion modelling: A case study at La Soufrière volcano (Guadeloupe, Lesser Antilles). *Journal of Volcanology and Geothermal Research*, 107312.
- P71) Heap M. J., Baumann T. S., Rosas-Carbajal M., Komorowski J. C., Gilg H. A., Villeneuve M., MORETTI R., Baud P., Carbillet L., Harnett C., and Reuschlé, T. (2021). Alteration-induced volcano instability at La Soufrière de Guadeloupe (Eastern Caribbean). *Journal of Geophysical Research: Solid Earth*, e2021JB022514.
- P72) MORETTI, R., Moune, S., Jessop, D., Glynn, C., Robert, V., & Deroussi, S. (2021). The Basse-Terre Island of Guadeloupe (Eastern Caribbean, France) and Its Volcanic-Hydrothermal Geodiversity: A Case Study of Challenges, Perspectives, and New Paradigms for Resilience and Sustainability on Volcanic Islands. *Geosciences*, 11(11), 454.
- P73) Heap, M. J., Jessop, D. E., Wadsworth, F. B., Rosas-Carbajal, M., Komorowski, J. C., Gilg, H. A., ... & MORETTI, R. (2022). The thermal properties of hydrothermally altered andesites from La Soufrière de Guadeloupe (Eastern Caribbean). *Journal of Volcanology and Geothermal Research*, 421, 107444.
- P74) Massaro, S., Rossi, E., Sandri, L., Bonadonna, C., Selva, J., MORETTI, R., & Komorowski, J. C. (2022). Assessing hazard and potential impact associated with volcanic ballistic projectiles: The example of La Soufrière de Guadeloupe volcano (Lesser Antilles). *Journal of volcanology and geothermal research*, 423, 107453.
- P75) Moune S., MORETTI R, Burtin A., Jessop DE, Didier T, Robert V, Bonifacie M, Tamburello G, Komorowski J-C, Allard P, Buscetti M. Gas monitoring of volcanic-hydrothermal plumes in a tropical environment: the case of La Soufrière de Guadeloupe unrest volcano (Lesser Antilles). *Frontiers* (In press)
- P76) Metcalfe, A., Moune, S., Komorowski, J. C., & MORETTI, R. (2022). Bottom-up vs top-down drivers of eruption style: Petro-geochemical constraints from the holocene explosive activity at La Soufrière de Guadeloupe. *Journal of Volcanology and Geothermal Research*, 107488.
- P77) Aiuppa A., Allard P., Lo Forte F.M., MORETTI R., Hidalgo S. (2022) Magmatic gas leakage from trapdoor faulting at Sierra Negra volcano (Isabela Island, Galápagos). *G3*, 23, , e2021GC010288.
- P78) Sauzéat L, Eychenne J, Gurioli L, Boyet M, Jessop D, MORETTI R, Monrose M, Holota H, Beuadoin C, Volle D. (2022) Metallome deregulation and health-related impacts due to long-term exposure to recent volcanic ash deposits: new chemical and isotopic insights *Science of the Total Environment*, 829: 154383.
- P79) Inostroza, M., Moune, S., MORETTI, R., Bonifacie, M., Robert, V., Burtin, A., & Chilin-Eusebe, E. (2022). Decoding water-rock interaction and volatile input at La Soufriere volcano (Guadeloupe) using time-series major and trace element analyses in gas condensates. *Journal of Volcanology and Geothermal Research*, 425, 107517.
- P80) MORETTI, R., & Ottonello, G. (2022). Silicate melt thermochemistry and the redox state of magmas. *Reviews in Mineralogy and Geochemistry*, 87(1), 339-403.
- P81) Papale, P., MORETTI, R., & Paonita, A. (2022). Thermodynamics of multi-component gas-melt equilibrium in magmas: Theory, models, and applications. *Reviews in Mineralogy and Geochemistry*, 87(1), 431-556.

- P82) Heap, M. J., Harnett, C. E., Wadsworth, F. B., Gilg, H. A., Carbillet, L., Rosas-Carbajal, M., ... & MORETTI, R. (2022). The tensile strength of hydrothermally altered volcanic rocks. *Journal of Volcanology and Geothermal Research*, 107576.
- P83) MORETTI R. (2022) Redox behaviour of degassing magmas: critical review and comparison of glass-based oxybarometers with application to Etna volcano. *Comptes Rendus de l'Académies des Sciences - Geoscience* (In press).

Chapters in indexed scientific books

- P84) MORETTI R., Papale P. and Ottonello G. (2003). A model for the saturation of C-H-O-S fluids in silicate melts. in: Oppenheimer C. Pyle D.M., Barclay J. (eds.) *Volcanic Degassing*, Geol. Soc. London Spec. Publ., 213, 81-101.
- P85) MORETTI R., De Natale G., Troise C. (2020) Hydrothermal versus magmatic : geochemical views and clues into the unrest dilemma at Campi Flegrei. In; *Vesuvius, Campi Flegrei and Campanian Volcanism* (De Vivo B., Belkin H. and Rolandi G. eds.), 371-406, doi.org/10.1016/B978-0-12-816454-9.00014-6
- P86) MORETTI R. and Neuville D. (2021) Redox Equilibria: From Basic Concepts to the Magmatic Realm. In *Magma Redox Geochemistry*, (Moretti R., Neuville D.R., eds.) *Geophysical Monograph 266*, 1-17, American Geophysical Union. John Wiley & Sons, Inc., DOI: 10.1002/9781119473206.ch1
- P87) MORETTI R. (2021) Ionic syntax and equilibrium approach to redox exchanges in melts: basic concepts and the case of iron and sulfur in degassing magmas. In *Magma Redox Geochemistry* (Moretti R., Neuville D.R., eds.), *Geophysical Monograph 266*, 117-138, American Geophysical Union, John Wiley & Sons, Inc. DOI: 10.1002/9781119473206.ch6.
- P88) Gibert D., de Bremond d'Ars J., Carlus B., Deroussi S., Ianigro J.-C., Jessop D., Jourde K., Kergosien B., Le Gonidec Y., Lesparre N., Marteau J., MORETTI R., Nicollin F. and Rosas-Carbajal M. (in press) Observation of the Dynamics of Hydrothermal Activity in La Soufrière of Guadeloupe Volcano With Joint Muography, Gravimetry, Electrical Resistivity Tomography, Seismic and Temperature Monitoring. In *Muography : Exploring Earth's Subsurface with Elementary Particles"* (Oláh L., Tanaka H.K.M., Varga D.) *Geophysical Monograph Series*, American Geophysical Union Wiley. DOI: 10.1002/9781119722748.ch5

Other publications (in reverse chronological order)

- A1) MORETTI R., Neuville D; (2021) Preface. In *Magma Redox Geochemistry* (Moretti R., Neuville D.R., eds.) *Geophysical Monograph 266*, ix-x, American Geophysical Union. John Wiley & Sons, Inc.,
- A2) MORETTI R., Moune S., Robert V., Bonifacie M., Jessop D., Komorowski J-C. Soliciting hydrothermal systems: the case of La Soufrière of Guadeloupe (FWI) unrest. *Proceeding of the 2019 Caribbean Science and Innovation Meeting*. Presses Universitaires Antillaises (in press)
- A3) Jessop D., Moretti R., Moune S., Bonifacie M., Burtin A., de Chabalier J.-B., Deroussi S., Komorowski J.-C., Rosas-Carbajal M., Bosson A., Didier T., Kitou T., Lemarchand A., Robert V. (2019). Les risques volcaniques au XXIe siècle : surveiller et prévoir ; l'exemple de l'OVSG. *Géologues* 201, 82-90.
- A4) De Natale G., Troise C., Somma R., MORETTI R. (2017) Nella Caldera dei Campi Flegrei. *LE SCIENZE*, 585
- A5) Fedele A., Pedone M., MORETTI R., Somma R., Wiersberg T., Troise C., De Natale G. (2016) Continuous gas sampling and analysis at the Pisciarelli fumarolic field (Campi Flegrei) by using a quadrupole mass spectrometer (QMS). *Rapporti Tecnici INGV*, 347, 1-19, ISSN: 2039-7941

- A6) Civetta L, MORETTI R, Orsi G (2013) Cosa sta succedendo sotto i Campi Flegrei. Ambiente Rischio Comunicazione, 5, 13-17. ISSN 2240-1520
- A7) MORETTI R. (2004). Volatile solubility in silicate melts with particular regard to sulphur species: theoretical aspects and application to Etnean volcanics. Plinius – Supplemento Italiano all'European Journal of Mineralogy, 29, 60-65.
- A8) MORETTI R., Dingwell D.B., Richet P. (2008) Preface. 8th Silicate Melt Workshop Volume. Chemical Geology, 256, 77-79
- A9) MORETTI R., Richet P. and Stebbins J.F. (2006) Preface. Physics, Chemistry and Rheology of Silicate Melts and Glasses Volume. Chemical Geology, 229, 1
- A10) MORETTI R., Carroll M.R., Papale P., Textor C. and Allard P. (2005). Gases in magmatic evolution: from depth to surface, from micro- to macroscale, from observation to calculation (Introduction). Annals of Geophysics, 48, 4/5, VII-XII.

Technical documents and reports

RM has authored numerous volcanic monitoring reports as a researcher of the INGV-Osservatorio but especially since when he has joined the IPGP – OVSG; such as: Activity Reports for the Comité de Liaison OVSG-Conseil Général de la Guadeloupe (dept. 971, F), the OVSG annual reports, the monthly OVSG activity reports (with new format and extended contents since 4/18) and a multitude of reports on felt regional earthquakes and La Soufrière seismic swarms.

I wish to recall here the expert advice for the Prefect and DEAL Guadeloupe about risks related to geothermal exploration and exploitation around La Soufrière de Guadeloupe and the several reports (deliverable) of EU funded projects, such as:

- F. Viveiros, F. Grassa, R. MORETTI, S. Caliro, M. Bonifacie, A. Di Muro, E. Ilynskaya, I. Iribarren, C. Federico, P. Labazuy, M. Liotta, N. Luengo, D. Matias, L. Moreno, S. Moune, M.A. Pfeffer, V. Prano, S. Oliveira, F. Salerno, C. Silva, V. Robert P. Torres (2021) D5.1: Best practices for direct sampling techniques and analysis of fumarolic gases. EUROVOLC Deliverable report (for public release), 28 pp.
- Massaro S., Rossi E., Dioguardi F., Bonadonna C., Sandri L., Barsotti S., Geyer A., Bonilauri E., Harris A., Selva J., Costa A., MORETTI R., Komorowski J.-C., Tamburello G., Moune S., Jessop D., Esposti Ongaro T., Legendre Y., Neri A. (2021) D12.2 Quantitative hazard assessment at test volcanoes. EUROVOLC Deliverable report (for public release), 43 pp.
- Komorowski J.-C., Legendre Y., Metcalfe A., MORETTI R., Moune S., Rosas-Carbajal M., Peruzzetto M., Jessop D., Burtin A., Beauducel F., de Chabalière J.-B., Lemarchand A., Saurel J.-M., Le Friant A., Villemant B., Boudon G., Caron B., Esposti Ongaro T., Barsotti S., Neri A., Heap M. (2021) Soufrière (Guadeloupe). La Soufrière de Guadeloupe. European Catalogue of volcanoes (Soufrière). <https://volcanos.eurovolc.eu/?volcano=SDG#>

I've also contributed and signed the INNOVA consortium declaration and summary report on climate change in Small Island Developing States (2 janvier 2020), resulting from the Workshop on Coastal Climate and Earth Observation Services for Small Island States (13-15 November 2019, Pointe à Pitre), ERA4CS initiative project H2020 EU INNOVA

Conferences international (Abstracts)

More than 150 abstracts submitted to international and national conferences, thematic schools and workshops. Invited talks are reported below.

• **SOFTWARES, PATENTS etc**

- CTSG6' : Fortran77 code for the solubility and speciation of sulfur in magmas (<https://github.com/charlesll/sulfur-magma>);
- IRON2 : Fortran77 code of iron oxidation state in magmas (<https://github.com/charlesll/iron-magma>)
- WaspecCLL : Fortran90 code for the speciation of water in magmas (<https://github.com/charlesll/water-speciation-magma>)
- CHOSETTO.exe (for Windows; under DOS-like shell): program computing the multicomponent degassing in the CO₂-H₂O-SO₂-H₂S-melt system (<https://github.com/charlesll/chosetto>) DOI: 10.5281/zenodo.5554941

• **INVITED TALKS AND LECTURES TO CONFERENCES AND/OR SCHOOLS**

MORETTI R. (2022) *The connection between gas release and composition to the oxidation state of magmas; Forthcoming International School "Understanding Oxygen Fugacity in Geoscience", 5-9 September 2022, Trieste, Italy*

MORETTI R., Le Losq C., Neuville D. (2022) *Volatiles in magmas and the polymeric nature of silicate melts and glasses. Forthcoming ICG 2022, 3-8 July 2022, Berlin, Germany*

MORETTI R (2022) *Geochemical and geophysical appraisal of the ongoing unrest at La soufrière de Guadeloupe, Lesser Antilles. Final congress of the Interreg Caraibes Prest Project, CDST de St. Pierre, Martinique, 13-19 May 2022.*

MORETTI R., Ottonello G. (2021) *Silicate melt thermochemistry and the redox state of magmas. AGU Fall Meeting 2021, 12-17 December 2021, New Orleans.*

MORETTI R. (2019) *Thermochemistry of magmatic degassing School on glass thermodynamics, TC3 ICG, GDR Thermo-HT, USTV, DGG; 12 May 2019, Friedrich Alexander University, Erlangen (D)*

MORETTI R (2018) *Redox (and acid-base) properties of aluminosilicate melts: the ionic-polymeric description 15th International Conference on the Physics of Non-Crystalline Solids & 14th European Society of Glass Conference (PNCS ESG 2018), St. Malo, 9-13 Juillet 2018*

MORETTI R. (2015) *Magmatic degassing, Ecole Thématique "Verres", CNRS-GDR/USTV/IPGP, Résidence CNRS Frejus-St.Rapahael (F) Avril 2015.*

MORETTI R. (2015) *Redox state of melts and glasses, Ecole Thematique "Verres", CNRS-GDR/USTV/IPGP, Résidence CNRS Frejus-St.Rapahael Avril 2015.*

MORETTI R. (2013) *Introductory Lecture on Redox, Atelier "Rédox", USTV/CNRS-GDR Verres. Nancy, 21-22 mars 2013*

MORETTI R., Marini L and Accornero M. (2011) *Sulfur isotopes in hydrothermal systems, Reviews in Mineralogy and Geochemistry School on "Sulfur in magmas" in Goslar (Germany), 2011*

MORETTI R. (2009) *Magmatic degassing, RTN EU Research Network on Volcano Dynamics (INGV Napoli), 2004*

MORETTI R. (2009) *Volcanic degassing, 2009 CAMGEO School (Lucca, Italy)*

MORETTI R (2009) *Fluxing by deep magmatic gases and volcanic activity. FIST GeoItalia 2009 (Rimini), session "I 5- Dinamica dei sistemi vulcanici dalla genesi all'eruzione del magma".*

Rimini, 9-11 Settembre 2009.

MORETTI R.(2005). On the behavior of redox pairs in hydrous and anhydrous silicate melts: from the oxygen electrode to the mutual interactions of Fe and S. *Eos Trans. AGU*, 86(52), Fall Meet. Suppl., Abstract : V23B-03 INVITED ORAL

- **OUTREACH AND MEDIAS (not exhaustive)**

Seminars and speeches

Intervention at the round table organized by the Mayotte deputy (*Assemblée Nationale*), 14 September 2021 (Fournier).

Audition at the plenary council session of the *Conseil Départemental de Guadeloupe* (971) about « *Déroulement de l'éruption de St. Vincent (2021), risques et conséquences* », 14 April 2021, Basse Terre, Palais du Département.

Séminar (Webinar) “*What are the ways small territories face and manage natural disasters? Guadeloupe experiences from recent events*”, Panel discussion on CARICOM/Regional Action on Disaster Risk Management and Mitigation, organized by the Institute of International Relations, University of West Indies, 3 mars 2021 (notice available at <https://sta.uwi.edu/iir/panel-discussion-caricomregional-action-disaster-risk-reduction-and-management> , last accessed on 24 May 2022).

Seminar (Webinar), 7 February 2021 « *I campi Flegrei e i vulcani Napoletani: Situazione attuale, evoluzione futura e strategie di mitigazione del rischio.*” Rotary and RotarAct clubs Salerno, district 2100 (<https://www.facebook.com/rotaractcampussalerno/videos/1448280188858493/> , last accessed on 24 May 2022)

Lecture « *Résilience de nos agricultures face au risque volcanique dans le contexte de petites économies insulaires: quels enjeux pour la recherche ?* », Journée sur « La place de la recherche agronomique dans le continuum Recherche/Formation/Innovation », 70 ans du Centre Inra Antilles-Guyane, 6 Décembre 2019, INRA Guadeloupe

Seminar « *L'activité récente de la Soufrière de Guadeloupe* », Grande conférence at Université des Antilles, Saint-Claude (Guadeloupe ; F) in the frame of the 3-days event « *Journées Japonaises* » organized by the Prefect of Guadeloupe, 3 June 2019 (notices at <https://www.guadeloupe.gouv.fr/layout/set/print/Politiques-publiques/Prevention-securite-des-personnes-et-des-biens/Defense-et-protection-civiles/Se-preparer-aux-risques-sismique-volcanique-et-aux-tsunamis-comme-au-Japon> ; https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=&ved=2ahUKewjC_tOwq_j3AhXsmmoFHeJrCDg4FBAWegQIFBAB&url=https%3A%2F%2Fwww.guadeloupe.gouv.fr%2Fcontent%2Fdownload%2F17783%2F114343%2Ffile%2F31052019%2520IP%2520journ%25C3%25A9es%2520japonaises.pdf&usg=AOvVaw2KiUpe3owyYoIU1aIRkUmL; streaming at <https://www.facebook.com/prefecture.guadeloupe/videos/378545512769397/UzpfSTIzNTgwMzE1MzY0MjUyMTo0MjY2NTcyODc4OTA0Mzk/> , last accessed on 24 May 2022)

Seminar « *Risque volcanologique de la Guadeloupe et la Caraïbe* » 4ème Forum de l'Urgence, 1st December 2018, Le Gosier (with journal article on the entire third-page of *France Antilles* on 4 december 2018) (https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=&ved=2ahUKewjmyvqYqfj3AhUanWoFHa1aBEMQFnoECB8QAQ&url=https%3A%2F%2Fwww.gip-raspeg.fr%2Fminisite_11%2Fmedia-files%2F491%2F4-risque-volcanologique-de-la-

[guadeloupe-et-la-caraibe.pdf&usg=AOvVaw0jkhyQD0BCAGHD9SfdnneV](#) , last accessed on 24 May 2022).

Seminar « *Surveillance du comportement du sous-sol dans le cadre de l'exploitation d'une station géothermale* », *Journée Synergile sur la Géothermie*, CIRAD-Petit Bourg, 23 Octobre 2018 (notice at <https://www.guadeloupe.developpement-durable.gouv.fr/rencontre-technique-le-mardi-23-octobre-2018-a2596.html> , last accessed on 24 May 2022).

Seminar « *La Soufrière de Guadeloupe et son état actuel* », OMNISCIENTES 2018, Amphithéâtre Mérault, Université des Antilles and *Rectorat de Guadeloupe*, 12 October 2018.

Lecture on Environment and Geothermics, conference “*Verso una nuova governance energetica ed ambientale*”, by “Noi Giovani” cultural association, 23 maggio 20015, Gricignano di Aversa (CE)

Lecture “*Il disastro ambientale in Campania: è possibile mettere un po' di ordine*”, two-day congress “*dai SITI CONTAMINATI alle SOLUZIONI*”, Scuola Politecnica e delle Scienze di Base – SUN, Aversa, 14.11.2013

Lecture “*Modelli idrogeologici e analisi degli impatti in siti contaminati*” for the meeting “*Campo Pozzi di Predosa: la riserva isropotabile dell'acquese e dell'alessandrino:...quale futuro?*”, 6 April 2013, Acqui Terme (AL) (with a letter of thanks from the Mayor)

Lecture: “*Rischi geologici e Previsione: fenomenologia, empirismo, probabilismo*”, *Liceo Scientifico E. Fermi*, Aversa, Conference “*I Rischi Naturali del territorio: dalla Scienza all'intervento, dal problema al rilancio socio-economico, dal sud all'Europa*” organized by the Lions club “Aversa Città Normanna”, 2 march 2013.

Lecture on geothermal energy (methods and technologies) in the frame of the “*Corso per i certificatori in energia* », *Ordine degli Ingegneri della Provincia di Caserta*, September 2013.

Seminar *Grand Public* sur “*Vésuve et Champs Phlegréens: 2000 ans de recherches*”, IPGP-Fête de la Science, 11 October 2012.

As for my research and the monitoring of active volcanoes, I have given several seminars in research centers and universities (eg, University Genova 15/4/2002, University “La Sapienza” of Rome 15/2/2006, CNRS -ISTO Orleans 26/6/2008, Camerino University 21/12/2010, Saint-Gobain Aubervilliers 30/6/2008, IPGP 17/6/2008, St. Mary's University Halifax 26/11/2012, IPGP 20 / 5/2016 ...) as well as in the field (eg 2001 WRI-10 pre-congress trip to Vesuvius and Campi Flegrei, IGC32 pre-congress trip to Solfatara de Pozzuoli) and for the several delegations of authorities and Master-level students in visit to the OVSG-IPGP or the INGV Naples at the time I was at the Observatory of Vesuvius.

Media appearances; documentaries and interviews (TV, radio, press):

I have appeared on the media (TV and Radio) many times, especially since taking office at the OVSG and because of the revival of activity of Soufrière Guadeloupe, the felt seismicity in the Antilles arc and surroundings (Venezuela, Puerto Rico) and the 2021 St. Vincent explosive eruptions. Here I can surely mention the following:

- Interview as invited guest at the TV news on *Guadeloupe 1ère* (8/5/2018; <https://www.youtube.com/watch?v=DgZBLhgbYK0> , last accessed on 24 May 2022)
- Interview as invited guest at the TV news on *Guadeloupe 1ère* (9/4/2021; <https://la1ere.francetvinfo.fr/guadeloupe/alerte-rouge-a-saint-vincent-la-soufriere-est-entree-en-eruption-979942.html> , last accessed on 24 May 2022)
- Interview as invited guest at the TV news on *Guadeloupe 1ère* (24/11/2021;

- <https://la1ere.francetvinfo.fr/guadeloupe/les-activites-de-la-soufriere-n-inquietent-pas-l-observatoire-volcanologique-1163479.html> , last accessed on 24 May 2022), organized via zoom because of Guadeloupe riot-related difficulties;
- Several appearances TV: on 7/2/2018 (during the first swarm felt in La Soufrière), May 2018 or the 15/1 / 2019 for the introduction of the Prefect's decree regulating the access to the Soufrière summit (appearances on *Guadeloupe 1ère*, <https://www.youtube.com/watch?v=xdjijNfa8F4> , last accessed on 24 May 2022, as well as *ETV* and *Canal 10*, <https://fr-fr.facebook.com/106879605998916/videos/en-direct-de-canal-10-avec-mr-roberto-moretti-directeur-de-l-observatoire-volcano/2266533730273726/>), for the event "Japanese Days" organized by the Prefect (3/6/2019 on *Guadeloupe 1ère*) or again for the earthquake close to the Desirade island on 25/7/2019 and many more.
 - Numerous interviews on the radio (*La 1ère Guadeloupe*, *RCI*, *ETV*) since 2018 on the activity of Soufrière as well as during the earthquakes felt in Guadeloupe and related to regional seismicity or in occasion of the explosive St. Vincent eruption (9 to 12 April 2021) (e.g., <https://www.rci.fm/guadeloupe/infos/Risques-naturels/La-Soufriere-tremble#> , <https://www.rci.fm/guadeloupe/infos/Risques-naturels/La-Soufriere-nen-finit-plus-de-trembler> , <https://www.facebook.com/107263804656651/videos/444976556575417/> , <https://soundcloud.com/rci-radio-caraibes/roberto-moretti-seisme-en-guadeloupe> , <https://www.rci.fm/guadeloupe/infos/Risques-naturels/Un-nouveau-seisme-secoue-la-Guadeloupe> , <https://la1ere.francetvinfo.fr/guadeloupe/matouba-saint-claude-au-coeur-projections-geothermie-soufriere-772685.html> , all last accessed on 24 May 2022).

An important outreach instrument is represented by *Guadeloupe 1ère's* web platform on the risks in Guadeloupe, where I often contributed to make a point on the volcanism and seismicity in the Antilles (e.g., <https://la1ere.francetvinfo.fr/guadeloupe/soufriere-regain-activite-niveau-vigilance-inchange-debut-2018-631096.html> with audio-interview; <https://la1ere.francetvinfo.fr/guadeloupe/tremblements-terre-guadeloupe-role-capteurs-humains-846432.html> with audio contribution; <https://la1ere.francetvinfo.fr/guadeloupe/seisme-big-one-mythe-realite-632658.html> with audio interview; <https://la1ere.francetvinfo.fr/guadeloupe/soufriere-respecter-perimetre-securite-649964.html> with audio interview, <https://la1ere.francetvinfo.fr/guadeloupe/fibre-optique-detecter-evaluer-seismes-mer-786891.html> with audio interview; all accessed on 24 May 2022).

The *France Antilles* newspaper has turned to me several times: let me quote, for example:

- the 3rd page on 4/12/2018 (<https://www.guadeloupe.franceantilles.fr/actualite/sante/les-urgentistes-apprehendent-le-risque-volcanique-515369.php> , last accessed on 24 May 2022)
- the full 2nd and 3rd pages devoted to the Observatory on 27/12/2018 (<https://www.guadeloupe.franceantilles.fr/actualite/sciences-et-recherche/la-soufriere-un-grand-laboratoire-naturel-555769.php> , last accessed on 24 May 2022).
- the full 12th page on 12/4/2021 after the speech at the plenary session of the Conseil Départemental de Guadeloupe to inform about the St. Vincent eruption and related risks and give an update on La Soufrière de Guadeloupe (<https://www.guadeloupe.franceantilles.fr/actualite/environnement/roberto-moretti-directeur-de-l-observatoire-volcanologique-et-sismologique-de-la-guadeloupe-on-doit-s-attendre-a-des-nuees-ardentes-a-saint-vincent-590778.php>, last accessed on 24 May 2022).

Several times the press quotes the OVSG and its director and re-launches our press-releases and interviewed me to understand more about volcanic risk (e.g., the magazine ANFORM, n. 87 at pages 150-153; <http://anform.net/soufriere-peut-on-predire-une-eruption/> , last accessed on 24 May 2022).

I was involved in the television documentary “*Soufrière, la vieille dame indomptable*” (*Passion Outremer* series), diffused by France O (broadcasted on 6 October 2019) and focusing on La Soufrière and OVSG-IPGP activities (now fully available at <https://www.facebook.com/meteodesouragans/videos/le-volcan-la-soufriere-la-vieille-dame-indomptable-de-la-guadeloupe/753419368450494/> ; see at 10m00s and 22m00s; last accessed on 24 May 2022).

On 28 June 2019 I have been appearing in a four-minutes reportage on France 3 - *Soir 3*, about geothermal opportunities in Guadeloupe (<https://www.francetvinfo.fr/france/guadeloupe/en-guadeloupe-un-volcan-produit-4-de-l-energie-locale-3511941.html> ; last accessed on 24 May 2022)

On May 7, 2014, France 3 broadcasted the popular TV show "The world of Jamy" devoted to volcanoes and also focused on the Phlegrean Fields, in which I was interviewed (12 min) as a geochemistry expert during the on site shooting in October 2013.

On April 28, 2006, I participated in the TV format "Explora - science television", as a geochemist invited to the round table on "Minerals and rocks". The recorded debate was broadcast by RaiEDu2 on May 24, 2006 (www.explora.rai.it)

On March 7, 2003, I gave an interview on the volcano "La Solfatara" for the TV format "*Sai Xché*", broadcasted by Mediaset-Rete4 May 26, 2003

The papers Moretti et al. (2017, G³) and Moretti et al. (2018, SciRep) have been the subject of international and Italian press releases as well as articles on Italian dailies.

When young researcher, I was launched in the arena by representing “Osservatorio Vesuviano” at the press conference on 8 Novembre 2000 at Prefettura di Napoli, which was about the National simulation exercise from *Protezione Civile* "Vesuvio 2000", involving the Comune di Trecase on 11 November 2000.

Other activities:

Since 2018 : Preparation, participation and intervention at the *Journée du Patrimoine* and *Fête de la Science* (annual commitments of the French government, State services and local authorities for culture, heritage and science).

The crisis simulation exercises (Volcano Exercises 2019 and 2021, Earthquake Exercise 2019 and 2020) organized with the Prefecture of Guadeloupe and the other State services also represented important opportunities for the dissemination of knowledge. Not only for the resonance of the exercise itself, but also because they have always been organized within the framework of risk knowledge dissemination activities such as the "Japanese Days" and the "Sismik week", with information workshops (of the panel discussion type) in which I participated with oral relations and which were also taken up by the media.

• **SPOKEN AND WRITTEN LANGUAGES**

Italian (mother tongue), English (fluent), French (fluent/bilingual) and Spanish (rudiments).