Paolo Papale

ITALY

Employment

2003 – pres Director of Research, INGV – Istituto Nazionale di Geofisica e Vulcanologia, Italy
2013 – 2016 Director of the Volcanoes Division of INGV
1999 – 2003 Researcher, INGV
1996 – 1999 Researcher, CNR
1990 – 1996 Contract Researcher, GNV/CNR

Distinctions, Roles and Services

2005-2010 Head of the National Program in Volcanic Hazards; 2005-2011 Secretary of Volcanology, EGU-European Geosciences Union; 2007-2011 President of the GMPV- Geochemistry, Mineralogy, Petrology and Volcanology Division of the European Geosciences Union, and EGU Council Member; 2008-2011 Chair of the EGU Bunsen Medal Committee; 2010-2012 EGU Holmes Medal Committee; 2011 Advanced Grant, European Research Council (approved, unfunded); 2011- Member of the Academia Europaea; 2012- Geo.8-European Alliance for Earth Sciences; 2017-2020 IUGG/IAVCEI Medal Committee; 2017-2021 Chair of the Earth and Cosmic Sciences Section of the Academia Europaea; 2019 IAVCEI Plenary Lecture invited speaker of the IUGG meeting in Montreal; 2022- Chair of the Class of Exact Sciences of the Academia Europaea.

Research Interests

Volcano physics and dynamics has been my major scientific interest during my entire career. My aim has been that of understanding the complex processes that determine the occurrence and control the evolution of volcanic eruptions. To that aim, I have been particularly interested in defining the most sophisticated fluid dynamic and thermodynamic models with the most advanced description of real multiphase properties. I pursue a holistic approach whereby the volcanic system is seen as an ensemble of mutually interacting sub-domains. That is leading to the development of a Global Volcanic Simulation approach whereby geophysical and geochemical observations prior, during and after an eruption are linked together with the complex magma and rock dynamics from depth to surface. Besides that, my coordination and direction roles have brought me to deal for about two decades with volcanic hazards, a subject that has been, and still is, among my major research interests. More recently I've got interested in analysing the global distribution of volcanism, which implied substantial statistical analyses. That brought me to define a global model for the time-size distribution of volcanic eruptions of any size on Earth, which in turn led to the first quantitative evaluation of the global volcanic hazard, and which has relevant implications for our capabilities to anticipate future volcanic eruptions and their size and impacts. Over the themes of quantitative volcanology I have been coordinating two European Marie-Sklodowska Innovative Training Networks (NEMOH: 2012-2015, and IMPROVE: 2021-2025); and I have been contributing to several EU and other international projects, among which the current H-EUROPE DT-GEO project aimed at developing a Digital Twin for Geophysical Extremes; and the large KMT-Krafla Magma Testbed initiative aimed at drilling into magma at the Krafla volcano in Iceland and building the first-ever magma observatory for experimentation in volcanology as well as in super-hot geothermal energy. I have supervised about 15 PhD and >20 post-docs, and I am the author of nearly 100 peer reviewed publications.