Preface

Fluids are key factors in volcanic and hydrothermal processes, and fluid circulation into, and release from, volcanoes take extraordinarily variegate forms. Volcanic gases are persistently dissipated by crater fumaroles and open-vents, to sustain vigorous plumes in the most extreme cases. Meteoric fluids permeate through volcanic rocks and, when variably admixed with ascending magma-sourced fluids, drive the incessant activity of volcano-hosted hydrothermal systems. Less visible, but not less important, forms of degassing include the volatile release from soils and cold groundwater systems in volcano peripheries. Investigating the chemistry of volcanic-hydrothermal fluids and quantifying the associated volatile fluxes are crucial to understanding how volcanoes operate, and to fully constrain hydrothermal circulation in the subsurface.

Mariano Valenza (1947-2018)

Volcano-hydrothermal fluids have been a matter of study, interest and fascination for Prof. Mariano Valenza over his entire lifetime. For more than four decades, Mariano Valenza, Professor of Geochemistry and Volcanology at Università di Palermo, investigated, with incessant enthusiasm, unique curiosity, and distinctive intellectual rigour, the chemistry of fluids in volcanic environments. Over the years, he contributed enormously to the development of fluid geochemistry by pioneering research in a variety of related fields, including -to name only a few- the redox properties of magmatic gases, their diffuse release through soils, and their continuous monitoring via instrumental networks. In doing so, he was an example for generations of scientists, leaving an indelible mark in the field of volcanic and hydrothermal fluid geochemistry.

With this thematic set of fifteen papers -published in this and in the next issue of the Italian Journal of Geosciences- we wish to properly honour Mariano Valenza's memory. The collection of papers covers a variety of complementary topics and summarizes the state-of-the-art in the field of fluid geochemistry of volcanic and geothermal areas.

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