

EGU23-8444, updated on 12 Feb 2024

<https://doi.org/10.5194/egusphere-egu23-8444>

EGU General Assembly 2023

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## Eruptive processes and landforms recognition in the Garrotxa Volcanic Field, Iberian Peninsula

**Dario Pedrazzi**<sup>1</sup>, Daniela Cerda<sup>2</sup>, Jordi Granell<sup>2</sup>, Gabor Kerestzuri<sup>3</sup>, Adelina Geyer<sup>1</sup>, Llorenç Planagumà<sup>4</sup>, Joan Martí<sup>1</sup>, and Xavier Bolós<sup>2</sup>

<sup>1</sup>Geosciences Barcelona, GEO3BCN-CSIC, Barcelona, Spain

<sup>2</sup>Department of Mineralogy, Petrology and Applied Geology, University of Barcelona, Spain

<sup>3</sup>Volcanic Risk Solutions, School of Agriculture and Environment, Massey University, Palmerston North, New Zealand

<sup>4</sup>Tosca, Environment Services, 17800, Olot, Spain

The Garrotxa Volcanic Field (GVF) is one of the monogenetic Quaternary volcanic fields associated with the intraplate European Cenozoic Rift System. The GVF is located between the cities of Olot and Girona, NE Spain, and it covers an area of about 600 km<sup>2</sup>. This volcanic field ranges in age from 0.7 Ma to early Holocene and is considered active since the last eruption dated 11,000-13,000 years ago.

The volcanic activity, mainly controlled by regional normal faults generated during the Neogene extension, was highly variable with over 50 scattered eruptive vents that were produced during short-lived monogenetic eruptions. Scoria cones represent the most common landforms of the GVF with subordinate maars and tuff rings/cones. Most of the volcanoes are located in the northern sector between the towns of Olot and Santa Pau and they stand on a folded Eocene basement. Volcanoes located in southern area of the field, close to the city of Girona, stand mainly on a fractured Paleozoic basement.

The objective of this work is to identify eruptive processes and the geomorphic evolution of volcanic edifices and related them to environmental influencing factors. The best volcanic structures in the GVF have been selected due to their well-preserved morphologies. Cones ( $W_{co}$ ) and craters ( $W_{cr}$ ) mean diameters, as well as cones maximum height ( $H_{max}$ ), maximum crater depth ( $D_{crmax}$ ) and external slope of the cones ( $S_{median}$ ) have been measured.

This study shows that it is possible to create a catalogue of likely eruption sequences based on field evidences and morphological/morphometric data. In this way, a more realistic eruption scenarios can be developed for different parts of the volcanic field. Morphometry can also provide rough relative age constraints on edifices. These methodologies can improve our understanding for a better evaluation of volcanic hazards in urbanized volcanic fields as the GVF.