



## **Basaltic ignimbrites in monogenetic volcanism**

Joan Marti (1), Gerardo Aguirre-Díaz (2), Llorenç Planagomà (3), and Adelina Geyer (4)

(1) Institute of Earth Sciences, Geophysics and Geohazards, Barcelona, Spain (joan.marti@ija.csic.es, +34-(0)93-4110012),

(2) Centro de Geociencias, Campus de Juriquilla, UNAM, Queretaro, México (ger@geociencias.unam.mx), (3) Tosca S.L.

Olot, Spain (lloren@tosca.cat), (4) CIMNE International Center for Numerical Methods in Engineering, Barcelona, Spain (ageyer@cimne.upc.edu)

Ignimbrites are common products of explosive volcanism of intermediate and silicic magmas. They also occur in eruptions of composite basaltic volcanoes. However, they have not been described associated with monogenetic volcanism yet. Commonly, monogenetic volcanism tends to generate lava flows, scoria and lapilli deposits, and different kinds of PDCs and explosion breccias when has a phreatomagmatic character. Here we build up on results from the La Garrotxa volcanic field, the youngest area of the Catalan Volcanic Zone, a sector of the Neogene-Quaternary European rifts system located at the NE corner of Spain about 90 km NNE of Barcelona. The latest dated eruption at La Garrotxa volcanic field occurred during the early Holocene and stratigraphic evidence suggests that more recent eruptions may have occurred. In this work, we describe the main characteristics of pyroclastic flow deposits that have been generated in several phreatomagmatic episodes occurred in this monogenetic basaltic volcanic field. Further comparison of these pyroclastic flow deposits with silicic ones and previous examples of ignimbrites associated with central basaltic volcanism, allows us to classify them as “basaltic ignimbrites”. We describe their eruption and emplacement mechanisms and discuss their implications when assessing the volcanic hazard of the area.