



Disruption of air traffic by small-magnitude eruptions: possible scenarios for the Canary Islands.

Alberto Prieto (1,2), Luca D'Auria (1,2), Giovanni Macedonio (3), Pedro A. Hernández (1,2), and William Hernández (1)

(1) Instituto Volcanológico de Canarias (INVOLCAN), San Cristobal de La Laguna, Spain (alberto.prieto.beca@iter.es), (2) Instituto Tecnológico y de Energías Renovables (ITER), Granadilla de Abona, Spain (ldauria@iter.es), (3) Istituto Nazionale di Geofisica e Vulcanologia, sezione di Napoli, Napoli, Italy (giovanni.macedonio@ingv.it)

The presence of volcanic ash in the air and their subsequent deposition could cause undesirable effects to air navigation and airport management. Fine and abrasive particles erode metal, clog fuel system and form layers of glass in the turbine of the aircrafts. This makes volcanic ash clouds a serious threat to the air traffic. The economy of Canary Islands depends heavily on tourism, hence the economic effects of a total or partial closure of some of their 8 airports would be severe. We model possible scenarios of small-magnitude eruptions in Canary Islands using FALL3D software, a time-dependent Eulerian model for the transport and deposition of tephra.

The main objective of this work is making a probabilistic estimation of the most affected airports, fly paths and their economic impact. For this purpose, realized Monte-Carlo simulations, varying vent position, meteorological conditions and vulcanological parameters, to take into account a complete set of different eruptive scenarios. This approach allow us to obtain a robust statistical evaluation about the possible disruption of air traffic in Canary Islands caused by a future small-magnitude eruption in the archipelago.