Geophysical Research Abstracts
Vol. 16, EGU2014-10191, 2014
EGU General Assembly 2014


# APhoRISM FP7 project: the Multi-platform volcanic Ash Cloud Estimation (MACE) infrastructure

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APHORISM is an FP7 project that aims to develop innovative products to support the management and mitigation of the volcanic and the seismic crisis. Satellite and ground measurements will be managed in a novel manner to provide new and improved products in terms of accuracy and quality of information. The Multi-platform volcanic Ash Cloud Estimation (MACE) infrastructure will exploit the complementarity between geostationary, and polar satellite sensors and ground measurements to improve the ash detection and retrieval and to fully characterize the volcanic ash clouds from source to the atmosphere. The basic idea behind the proposed method consists to manage in a novel manner, the volcanic ash retrievals at the space–time scale of typical geostationary observations using both the polar satellite estimations and in-situ measurements. The typical ash thermal infrared (TIR) retrieval will be integrated by using a wider spectral range from visible (VIS) to microwave (MW) and the ash detection will be extended also in case of cloudy atmosphere or steam plumes. All the MACE ash products will be tested on three recent eruptions representative of different eruption styles in different clear or cloudy atmospheric conditions: Eyjafjallajokull (Iceland) 2010, Grimsvotn (Iceland) 2011 and Etna (Italy) 2011-2012. The MACE infrastructure will be suitable to be implemented in the next generation of ESA Sentinels satellite missions.