



## **Volcanic Ash Monitoring and FOrecaSting between Sicilia and Malta arEa and sharinG of the resUlts foR aviatiOn safety: the VAMOS SEGURO project**

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Mt. Etna, in Italy, is one of the most active volcanoes in the world and during its frequent explosive episodes, eruption columns rise to several kilometers and fine ash is dispersed hundreds kilometers away from the vent reaching the neighboring countries. The Maltese Islands, for example, are situated at the center of the Mediterranean, only 100 km south of Sicily and, due to the close proximity, have been already affected by the past Etna volcanic activity. A reliable monitoring and forecasting system of Etna volcanic ash has to include all areas that could be reached by volcanic ash. For this reason, a new research project named VAMOS SEGURO, has been recently funded by Programma di Cooperazione Transfrontaliera Italia-Malta 2007-2013, with the aim to reduce the impact that Etna's explosive activity has in the area between Sicily and Malta. This project is developed within a cooperation between the Istituto Nazionale di Geofisica, Osservatorio Etneo, the Istituto Nazionale di Astrofisica (INAF), Comune of Montedoro, in Caltanissetta, the University of Malta, and Consorzio Interuniversitario per le Scienze Fisiche della Materia (CNISM). In this project, several instruments (e.g. aerosol optical depth analyzer, microbalance, laser cascade instrument, meteorological stations, aethelometer) have been installed at Giordan lighthouse at Xewkija, in Gozo, managed by the University of Malta. Furthermore, an innovative Lidar system with scanning capability, has been designed and realized by CNISM and is able to indentify the area affected by volcanic ash in Sicily and quantify the ash concentration in atmosphere. The Lidar may be transported and installed in the INAF astronomical observatories of Noto and Serra La Nave, only 7 km away from the Etna summits, and in Montedoro. Finally, an automatic forecasting system produces dispersal maps for the region between Sicily and Malta and for a typical Etna scenario. Results of simulations are daily visible at [www.ct.ingv.it/vamosseguro](http://www.ct.ingv.it/vamosseguro). The system is collecting measurements of ash and SO<sub>2</sub> plumes and will provide warnings to the competent civil and aviation authorities in Catania and Malta during Etna eruptions.