



Satellite monitoring of Eyjafjallajökull (Iceland) volcano by means of Robust Satellite Techniques (RST)

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On 20 March 2010, after several years of quiescence, a new eruption took place at Eyjafjallajökull volcano (Iceland). After a pause in eruptive activity, a new vent opened on 13 April generating a column of ash several kilometres high and causing melting of overlying glacier ice. This eruption, that continued until 23 May, caused serious diseases to worldwide air traffic, determining the closure of airspace over many parts of Europe. Such an event was a test case for multidisciplinary volcanic researches, among these, satellite observations were particularly suitable to follow the space-time evolution of this eruptive event. The RST (Robust Satellite Techniques) approach, an innovative multi-temporal scheme of satellite data analysis that was already successfully employed to monitor several active volcanoes, has also been used to study the recent Eyjafjallajökul eruption. In this work results of this study, achieved using both polar (e.g. EOS-MODIS) and geostationary (e.g. MSG-SEVIRI) satellite data, the most suitable to perform a real time monitoring of volcanic phenomena, are presented. The performances of the RST-ASH configuration in identifying and tracking volcanic ash plumes emitted by Eyjafjallajökul volcano will be evaluated, even in comparison with traditional split window techniques. In addition, the capabilities of RST-VOLC configuration in monitoring thermal volcanic activity and in detecting possible thermal precursors of 13 April eruption will be analysed and discussed.