



Validating and exporting RST approach for ash cloud detection and tracking

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Satellite sensors like AVHRR (Advanced Very High Resolution Radiometer) have often been used to identify and track volcanic ash plumes which, containing large amounts of silicate particles, may strongly damage aircraft engines, posing a serious threat for air traffic. An original multi-temporal technique, named RST (Robust Satellite Techniques), applied both in its standard (i.e. two-channel) and advanced (i.e. three-channel) configuration, has been successfully used to identify ash plumes at different geographic locations, showing a good reliability in automatically discriminating ash from weather clouds with low false positive rate. In this work, a full assessment of this method on more than one year of AVHRR observations, recorded both in daytime and night-time over Mt. Etna area, is presented. Besides, RST exportability on different satellite systems with enhanced spectral and/or temporal (e.g. EOS-MODIS, MSG-SEVIRI) resolutions is investigated and discussed also in terms of a possible further improvements of its performances up to a full operational implementation.