* 1. **SEVIRI data**

Space observations of dust were produced using satellite data from the space sensor SEVIRI. This sensor is located on the MSG (Meteosat Second Generation) series of satellites operated by the European Organization for the Exploitation of Meteorological Satellites (EUMETSAT). SEVIRI (Spinning Enhanced Visible and Infrared Imager) is a geostationary sensor and it provides images in 15-minutes loop at a resolution of 3 km with one-kilometer sampling distance at nadir (Schmetz et al., 2002).

For the dust event analyzed in this work, satellite data from SEVIRI has been processed from 29 March 2015 until 4 April 2015. SEVIRI consisted of brightness temperatures and reflectances according to spectral channels in the visible (0.6, 0.8 and 1.6 m) and in the infrared (IR) region (3.9, 6.2, 7.3, 8.7, 9.7, 10.8, 12.0 and, 13.4 m).

Dust RGB images based on visible channel data from SEVIRI at 0.6, 0.8 and 1.6 m were used to track dust during the daytime. On the other hand, the Dust mask during day and night was generated using the brightness temperatures calculated from the infrared channel data at 8.7, 10.8 and 12.0 m. For the generation of the dust mask we have used the algorithm developed by MétéoFrance and explained in a recent work to evaluate mineral dust over North Africa and the Middle East with MSG-SEVIRI (Banks and Brindley, 2013; MétéoFrance, 2011)

The Dust detection method consists in the difference between various infrared channels. Because of its high atmospheric transmission, the channel at 12.0 m is used as the reference channel revealing to be the most suitable indicator of the surface temperature under clear sky conditions. The IR channel at 12.0 m is used to remove water/ice clouds from the dust detection. On the other hand, the ratio between the reflectances at 0.6 and 1.6 m is used to discriminate dust from smoke. The combination of channels at 3.9, 0.6 and 1.6 m is used to detect dust under specific conditions, instead the channel at 8.7 m, detects dust/sand in the atmosphere and on the surface (Banks and Brindley, 2013).

In order to discriminate between sandy dune fields, rocky hamadas, hills and mountains, the MétéoFrance algorithm accounts for past time averages of cloud-screening estimated from the difference between the channels at 10.8 and 0.87 m. In this work, we have used biweekly moving averages cloud-screening values to account for anomalies might arise from other types of surfaces that can erroneously flag the dust signature.