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Multi-annual satellite Land Surface Temperature monitoring over the Campi Flegrei region, Italy

Massimo Antoninetti and Daniela Stroppiana
IREA - CNR, Italy (antoninetti.m@irea.cnr.it)

A multi-temporal and multi-annual Land Surface Temperature dataset was created from medium resolution Landsat archive over a study area in Southern Italy. The study area encompasses the Campi Flegrei caldera, Napoli, Italy, which is characterized by a high volcanic risk. Over the period 2011-2013 a total of 43 Landsat 8, 7 and 5 scenes were requested over the study area from USGS Earth Explorer web site (https://earthexplorer.usgs.gov/). Data was downloaded as surface reflectance (sr) and brightness temperature and provided with cloud and cloud shadow masks. The dataset was processed with a QGIS plug in (https://plugins.qgis.org/plugins/LandSurfaceTemperature) to derive Land Surface Temperature (LST) [Kelvin] data. Different algorithms available in the QGIS plug in were tested and results compare. The multi-temporal multi-annual dataset of LST images was analysed with respect to the characteristics of the study area.