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Real time of earthquakes prone areas by RST analysis of satellite TIR radiances: results of continuous monitoring over Italy and Turkey regions.

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Meteorological satellites offering global coverage, continuity of observations and long term time series (starting even 30 years ago) offer a unique possibility not only to learn from the past but also to guarantee continuous monitoring whereas other observation technologies are lacking because too expensive or (like in the case of earthquake precursor studies) or considered useless by decision-makers.
Space-time fluctuations of Earth's emitted Thermal Infrared (TIR) radiation have been observed from satellite months to weeks before earthquakes occurrence. The general RST approach has been proposed (since 2001) in order to discriminate normal (i.e. related to the change of natural factor and/or observation conditions) TIR signal fluctuations from anomalous signal transient possibly associated to earthquake occurrence.
Since then several earthquakes occurred in Europe, Africa and America have been studied by analyzing decades of satellite observations always using a validation/confutation approach in order to verify the presence/absence of anomalous space-time TIR transients in presence/absence of significant seismic activity.
In the framework of PRE-EARTHQUAKES EU-FP7 Project (www.pre-earthquakes.org) , starting from October 2010 (still continuing) RST approach has been applied to MSG/SEVIRI data to generate TIR anomaly maps over Italian peninsula, continuously for all the midnight slots. Since September 2011 the same monitoring activity (still continuing) started for Turkey region. For the first time a similar analysis has been performed in real-time, systematically analyzing TIR anomaly maps in order to identify day by day possible significant (e.g. persistent in the space-time domain) thermal anomalies. During 2011 only in very few cases (1 in Italy in July and 2 in the Turkish region in September and November) the day by day analysis enhanced significant anomalies that in two cases were communicated to the other PRE-EARTHQUAKES partners asking for their attention.
In this paper results of such analysis will be presented which seem to confirm results independently achieved (unfortunately without their knowledge) by other authors applying a similar approach to EOS/MODIS data over California region.