



Robust Satellite Techniques for seismic prone area monitoring: recent achievements and future perspective toward a multi-parametric t-DASH system

Roberto Colonna et al. ▶

After more than 25 years of studies it is possible to draw a balance of the efforts, based on the application of Robust Satellite Techniques to long-term satellite TIR (Thermal InfraRed) radiances, to identify (isolating them from all the others possible sources) those anomalies (in the spatial/temporal domain) possibly associated to the occurrence of major earthquakes.

The results achieved by processing multi-annual (more than 10 years) time series of TIR satellite images collected in different continents and seismic regimes, showed that more than 67% of all identified (space-time persistent) anomalies occur in the pre-fixed space-time window around the occurrence time and location of earthquakes ($M \geq 4$), with a false positive rate smaller than 33%. Moreover, Molchan error diagram analysis gave a clear indication of non-casualty of such a correlation, in comparison with the random guess function.

Here, we will critically discuss the results up to now achieved by applying long-term RST analyses in different part of the world. Moreover, we will also discuss the common and/or peculiar elements of success/failure respect to the possibility to build and implement a multi-parametric system for a time-Dependent Assessment of Seismic Hazard (t-DASH).

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