



## **Performance assessment of fire-sat monitoring system based on satellite time series for fire danger estimation : the experience of the pre-operative application in the Basilicata Region (Italy)**

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This paper presents the results we obtained in the context of the FIRE-SAT project during the 2012 operative application of the satellite based tools for fire monitoring. FIRE\_SAT project has been funded by the Civil Protection of the Basilicata Region in order to set up a low cost methodology for fire danger monitoring and fire effect estimation based on satellite Earth Observation techniques.

To this aim, NASA Moderate Resolution Imaging Spectroradiometer (MODIS), ASTER, Landsat TM data were used. Novel data processing techniques have been developed by researchers of the ARGON Laboratory of the CNR-IMAA for the operative monitoring of fire. In this paper we only focus on the danger estimation model which has been fruitfully used since 2008 to 2012 as an reliable operative tool to support and optimize fire fighting strategies from the alert to the management of resources including fire attacks.

The daily updating of fire danger is carried out using satellite MODIS images selected for their spectral capability and availability free of charge from NASA web site. This makes these data sets very suitable for an effective systematic (daily) and sustainable low-cost monitoring of large areas. The preoperative use of the integrated model, pointed out that the system properly monitor spatial and temporal variations of fire susceptibility and provide useful information of both fire severity and post fire regeneration capability.