



## Analysis of time-series PRI and hotspot occurrence: preliminary results on Italy

Rosa Loizzo, Cosimo Marzo, and Rocchina Guarini

Agenzia Spaziale Italiana - Centro di Geodesia Spaziale, Matera, Italy

The Photochemical Reflectance Index (PRI) is a remotely-sensed indicator of light-use efficiency due to its ability to reveal changes in the concentration of xanthophyll cycle pigments (Gamon et al., 1990, 1992, 1993). The index considers the reflectance at 531 nm (the xanthophyll cycle signal) and a reference wavelength at 570 nm, in the following relationship .

The PRI time-series data is usually used as indicator of water stress effects on vegetation both at leaf level and at landscape level. In this work a multitemporal analysis of PRI is performed in order to evaluate its capability in monitoring vegetation status to support wildfire prevention, monitoring and management in Mediterranean regions. Preliminary results obtained on Italy are shown.

NASA MODIS data (MOD021KM) acquired on Italy in the last years are downloaded and PRI is automatically generated by using Band 11 (centred at 531 nm) and band 12 (centred at 551 nm) as reference band (Garbulsky et al., 2008; Papale et al., 2006; Drolet et al., 2005). The PRI time-series is analysed in order to define its behaviour at large spatial and temporal scale respect to fire occurrence in Italy obtained by hotspot detected on Meteosat Second Generation images. The main objective is to assess the effectiveness of remote sensing PRI to estimate and/or to predict variation in vegetation condition due to meteorological effects (water stress, high irradiance) and fire occurrence.