Geophysical Research Abstracts, Vol. 9, 06843, 2007
SRef-ID: 1607-7962/gra/EGU2007-A-06843

A dynamic cloud masking and filtering algorithm for MSG retrieval of land surface temperature

F. Baroncini *(1), F. Castelli (1), F. Caparrini (1), S. Ruffo (2)

(1): departement of civil engineering- University of Firenze - Italy, (2): Departement of energetic engineering- University of Firenze - Italy, * : (snik@inventati.org)

With the birth of a new high temporal resolution generation of geostationary satellites (e.g. MSG-1 in orbit around the earth from 2001) a new perspective in interpreting the information coming from remote sensors arise. In this paper we discuss an approach to modify the linear formulation of the Kalman filter with two threshold controls applied to the filter a priori error and error covariance. Though this approach we estimate the soil parameter of land surface temperature from MSG images. A phisically-based linear model of land surface temperature is used to update the filter, this model only depends on the computed top-atmosphere net radiation. The results shows that this dynamic model is able to detect a very selective quantity of pixels contaminated by clouds in comparison with the traditional static methods in use maintaining the same precision for the soil parameter estimate of land surface temperature.