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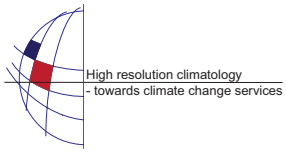

Observed tropical and extratropical modes of variability in moisture fields from climate satellite dataset

S. Malmusi and M. Boccolari

University of Modena and Reggio Emilia, Department of Engineering of Materials and Environment, Modena, Italy (simona.malmusi@unimore.it, +39 059 2056243)

Global and high resolution climate dataset taken from satellite images represents one of the most interesting sources for the monitoring and the investigation of present climate and, for short time periods (decadal), an alternative to NWP reanalysis datasets. The Satellite Application Facility on Climate Monitoring (CM-SAF) archive represents a complete global dataset since January 2004 of several daily and monthly averaged atmospheric variables such as radiative flows at surface and TOA, clouds parameters, precipitable water, surface albedo and so on.

In this study CM-SAF daily data of layered precipitable water and relative humidity for a period of six years, all over the globe (with the exception of polar regions), have been analyzed. Applying teleconnectivity maps both in horizontal and in vertical, and multivariate statistics methods (EOF) to moisture fields, the appearance of principal modes of general circulation variability patterns over the tropical band (Indian peninsula, southern Africa, Australia and West Pacific Ocean) seems to have been revealed. Moreover, comparisons of precipitable water fields with surface albedo and clouds data, yet collected from CM-SAF archive, have been evaluated.