Scenes Analysis for the Meteosat Third Generation Infrared Sounder Observations

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EUMETSAT prepares for the next generation of geostationary satellites. Among the three candidate missions is an infrared sounder. The preparatory activities for especially this candidate mission will greatly benefit from exploring the hyperspectral IASI observations. The MTG-IRS candidate mission observations would be used to monitor vertical distributions of temperature and moisture. Although there are a number of promising activities, regarding the retrieval of thermodynamical properties from all sky observations, initially these temperature and moisture profiles will be derived from cloud free spatial samples. Thus an accurate scenes analysis is required to classify each observation according to its cloud amount. McNally and Watts (2003) described a cloud detection algorithm for high spectral resolution infrared sounders. To understand the performance of this algorithm in relation to a possible application to MTG-IRS observations, a number of tasks have been performed. First, in order to increase the confidence in the performance of this cloud detection algorithm, it was applied to IASI observations and compared to results of other scenes analysis methods like the CO_2 slicing method and the operational cloud mask derived from collocated AVHRR observations. Results of this comparison will be presented during the presentation, as well as results of the method when applied to IASI as a proxy for MTG-IRS. This means that the spectral coverage of the original IASI data is reduced to match the MTG-IRS coverage, and also the spectral sampling is modified according to the MTG-IRS specifications. The effect of these modifications on the performance of the cloud detection is presented.

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