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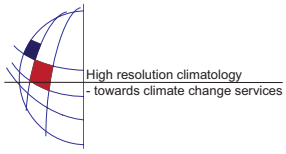

Remote sensing of boundary layer properties using Infrared Sounding

J. P. A. Martins (1), J. Teixeira (2), P. M. M. Soares (1), P. M. A. Miranda (1), A. F. Santos (1), V. Dang (2), F. W. Irion (2), E. Fetzer (2), and E. F. Fishbein (2)

(1) University of Lisbon, IDL, CGUL, Lisbon, Portugal (jpmartins@fc.ul.pt), (2) Jet Propulsion Laboratory / California Institute of Technology

Several techniques have been used to measure Planetary Boundary Layer (PBL) properties, but none of them allows the spatial and temporal sampling properties of spaceborne remote sensing instruments. This work addresses the potential of diagnosing PBL height using an almost unexplored dataset from the Atmopheric InfraRed Sounder (AIRS) suite, known as the support product, which samples the atmospheric properties in a 100-level grid. This kind of vertical sampling allowed the use of a simple algorithm to detect strong gradients on the potential temperature and relative humidity profiles to determine the PBL height. A comparison of these estimates against rawinsonde data from the Rain in Cumulus over the Ocean (RICO) campaign was made and good agreement between the two datasets was found at the local scale. A global distribution of PBL height was also computed and compared against other datasets such as Radio Occultation measurements and model reanalysis. Temporal and spatial variability of this quantity can easily be discussed in light of well known large scale circulation features, revealing the true potential of this dataset has to provide important information useful to develop new parameterization schemes.