

# ***The Use of HSB to Derive the Integrated Water Vapor Content: An Example Using the RACCI/LBA Experiment***

**Wagner Flauber Araújo Lima and Luiz Augusto Toledo Machado**

This work presents the capability of the HSB (Humidity Sensor Brazil) channel in retrieving Integrated Water Vapor Content. The data analyses of this study have been carried out in two stages: firstly using simulations of the HSB channel brightness temperatures from RTTOV radiative model, and secondly, using data from the “RACCI/LBA” (Radiation, Cloud, and Climate Interactions/Large Scale Biosphere Atmospheric Experiment in Amazônia) experiment in Rondônia, during the period of September and October 2002. The results show the potential of the  $183 \pm 1, 3 \text{ e } 7$  GHz channels in retrieving middle and upper tropospheric water vapor for clear sky situations. The estimation of integrated water vapor contents in the atmosphere using HSB channels was not possible due to the absence of troposphere low level information, where most of the water vapor is concentrated. The 150 GHz channel, which has the maximum peak of its weight function next to the surface, is strongly influenced by the surface emissivity.