

Session 5b, TRMM Hydrology (Parallel with Sessions 5A)
15th Conference on Hydrology

5b.4

**Measurements of solar and terrestrial radiation above and inside the Rebio-Jaru
Amazonian forest during the LBA Wet Season Campaign**

Antonio O. Manzi¹, Rildo G. Moura², Leonardo Deante Abreu Sá², and Regina C. S. Alvalá². (1) INPE, Cachoeira Paulista, SP 12630-000, Brazil, (2) INPE, Sao Jose dos Campos, Sao Paulo 12201-970, Brazil

Data of global solar radiation, photosynthetically active radiation (PAR) and net radiation above and inside of the forest canopy, and terrestrial (long wave) radiation above the canopy, were measured on a 60m height micrometeorological tower built at the Amazonian Forest Rebio-Jaru Reserve (10°04' S; 61°56' W). These measurements were made during the LBA (Large Scale Biosphere Atmosphere Experiment in Amazônia) wet season campaign, from January to March 1999, in the Brazilian State of Rondônia. A set of four pyranometers, two net radiometers and two pyrgeometers was installed on the top of the tower to obtain measurements of all components of the surface radiation budget: incoming and reflected solar radiation, incoming long wave radiation from the atmosphere and upward long wave radiation from the surface, and net radiation. Two quantum sensors measured the incoming and reflected PAR radiation above the canopy. To determine the variation of net radiation, PAR and solar radiation inside the canopy, three profiles (westward, southward and eastward of the tower) were taken at four levels with net radiometers, quantum sensors and pyranometers, respectively. During the last ten days of the field campaign, radiometers were moved to twelve regularly distributed points near the forest ground around the tower, in order to determine the net radiation, PAR and solar radiation reaching the forest ground. Preliminary results indicate that a higher percentage of incoming solar radiation at the top reaches the Rebio-Jaru forest ground when compared with other Amazonian forest sites, such as Reserva Ducke in Manaus and Tucuruí, in the State of Amazonas. On the other hand, a difference of about ten percent in the net radiation, around midday, was observed by two sensors installed eight meters apart from each other, at the height of twenty meters above the canopy.

8:30 AM, Thursday, 13 January 2000

80th AMS Annual Meeting Meeting
AMS Home Page