

25) POSTER

Contrasting conditions of atmospheric water balance and moisture transport in summertime in the Amazon basin during EL Niño 1997-98 and La Niña 1998-99.

Jose Augusto Veiga ¹, Jose A. Marengo ², J. F. Oliveira. ¹

LMO/CPTEC/INPE, São José dos Campos Sp, Brazil. ¹

CPTEC/INPE, Cachoeira Paulista Sp, Brazil. ¹

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Rua avião tangara 71, bairro Jd Souto.

CEP: 12227160

Cidade São Jose dos Campos.

Fone: 0XX12 3945-6660

José Augusto Paixão Veiga

E-mails: Jaugusto@cptec.inpe.br

In this study we study and assess the components of the atmospheric water balance and the moisture transport in the Amazon basin, using the NCEP-NCAR reanalyses and focusing on the 1997-98 and 1998-99 extremes of the Southern Oscillation. The summer of 1998 was characterized as rainfall deficient, with large negative rainfall departures in southern Amazonia, which persisted during the autumn peak of the rainy season in northern Amazonia. On the other hand, the summer of 1999 was considered between normal and moderately rainy in northern and central Amazonia. Moisture fluxes indicate the weak moisture input from the tropical Atlantic into the Amazon region during the 1998 El Niño summer, generating large rainfall departures in most of the region. In fact, the vertical cross sections tend to show a weak moisture input into the Amazon, while the exportation of moisture outside the Amazon by the Low Level Jet east of the Andes (LLJ) during 1998 was very intense, showing that besides the Amazon basin receiving less moisture from the tropical North Atlantic, this little amount was exported outside the region. Situation in 1999 was not much different from the normal, showing that rainfall and moisture transport into and outside the Amazon basin is more sensitive to El Niño and its related circulation anomalies than to La Niña. Previous studies using upper air observations and modeling have shown that the summer of 1998 exhibited more frequent and intense LLJ than the summer of 1999, consistent with the circulation and rainfall composites 1998-1999 presented in here.