Geophysical Research Abstracts,
Vol. 10, EGU2008-A-07274, 2008
SRef-ID: 1607-7962/gra/EGU2008-A-07274
EGU General Assembly 2008

Multi satellite radar altimetry for the study of hydrological cycle within the rio Negro floodplains (Amazon basin)

J. Santos da Silva (1,2), E. Roux (3), S. Calmant (1), O. C. Rotunno Filho (2), J. F. Cretaux (1) and F. Seyler (3)

(1) Laboratoire d´Etudes en Géophysique et Océanographie Spatiales, UMR 5566, CNES/CNRS/UPS/IRD, Observatoire Midi-Pyrénées, Toulouse, France (joecila.silva@ird.fr / Fax: +33 561253205 / Phone: +33 561332902)

(2) Universidade Federal do Rio de Janeiro, Rio de Janeiro, Brazil

(3) Laboratoire des Mécanismes et Transferts en Géologie, UMR 5563, CNRS/UPS /IRD, Observatoire Midi-Pyrénées, Toulouse, France

The extension of the Amazon basin humid zones can be viewed as an important challenge for environmental studies. Indeed, in the large, low-slope basins, such as the Amazon basin, the floodplains play a major role in the regulation of the water cycle. Frappart et al. (RSE, 2005) studied the floodplain volume variation in the Rio Negro basin, using the sole Topex/Poseidon (T/P) GDR's data. In this study, river main stream and their linked floodplains could not be separated, due to the course effective resolution of these data. We have processed both data of ENVISAT RA2 altimeter, and retracked T/P data. The T/P data have been retracked with three of the ENVISAT trackers (Ocean, Ice1, Ice2). We present results of the comparison between the capability of each sensor and tracker to discriminate small water bodies including river main stream and floodplain. An the original 3D method has been employed in order to define virtual stations, and to compute time series of water stage for each individual flooded area. In addition to that, the typology of the inundated area has been determined by the way of satellite image classification.