



Comparison of free surface stages and slopes by satellite altimetry and GPS in-situ measurements

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We compare Negro river free water surface slope as measured by radar satellite altimeters such as T/P and ENVISAT with GPS measurements acquired during a field campaign in May 2005, which is a high stage period. In addition we compare these radar altimetry data with laser altimetry data (ICESat mission) collected from September to November 2003, which is a low stage period. These comparisons allow us to assess the relative precision of the different datasets, and to highlight the possible use of slope measurements to derive discharge estimation from satellite altimetry. Discharge estimates obtained by different space sensors are compared with discharge estimates obtained by conventional methods (ADCP). Implications about the potential of future altimetric missions such as ALTIKA, CRYOSAT or WATER are discussed.