



Satellite Altimetry over rivers of Madagascar

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In Madagascar, many in-situ stations aren't any longer working and the few lasting are too sparse to provide sufficient spatial coverage of the big island. Establishing additional way for observing surface waters is an important key for better understanding and management of the water ressource of the country. Also, data from the remaining stations are lately updated. Hence, spatial altimetry have been tested to estimate variation of heights of surface waters for the first time in Madagascar over the rivers, generally narrow and shallow. Results reported here have been obtained by processing Envisat, Jason 2 and Saral data. Some virtual stations (ground tracks crossing rivers) were found and associated time series have been produced. The Envisat series have been validated by comparison with with gauge measurements over the Sofia river. Also, some internal validation were possible at some crossovers. Good correlations were obtained as well as relatively low root mean squared error, comparable with previous studies. These esults indicate that satellite altimetry is exploitable and has potential applications for the malagasy rivers.