



## **Intercomparison of GRACE Solutions with Hydrological Model Outputs Over Tropical Africa**

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Different estimates of total continental water storage variations over tropical Africa have been derived from GRACE satellite gravity measurements over the period 2002-2008. Here we analyse the solutions provided by different groups (CSR, GFZ, GRGS, ITG and JPL) and we compare them with the outputs of global hydrological simulations based on two land surface models (ISBA and WGHM) driven by observed atmospheric forcings. The comparison is made at three timescales: annual cycle, interannual variability and possible trends over recent decades. The focus is mainly on East Africa where natural climate variability and anthropogenic effects (e.g. regulation of Lake Victoria) both contribute to the recent fluctuations of regional water storage. The results show a relatively good agreement between the GRACE solutions and the models outputs, at least as far as the annual cycle is concerned, and suggest that GRACE data are useful for the validation of global hydrological models and the study of land water budget variability at the regional scale.