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Evaluation of water and energy balances ovet the Colombian Orinoco Catchment Basin

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This study presents a comparison between in-situ observations and gridded data from reanalyses and from a regional climate model over the Colombian Orinoco Catchment Basin, in South America, with focus on the surface water and energy balances. We use datasets from the regional climate model REMO and re-analyses ERA40, ERAInterim and NCEP/NCAR. The in-situ observations have been provided by the Colombian Institute of Hydrology, Meteorology and Environmental Studies (IDEAM). The balances are for the 1958-2011 period. Statistical analyses of temperature and precipitation are also presented. Discrepancies between gridded datasets and observations are evaluated and possible sources of error in each of the datasets are discussed. The research presented is the first intercomparison of the surface water and energy balances over the Colombian Orinoco Catchment Basin from different datasets.