



## **Terrestrial water storage from basin-scale water-balance diagnostics and GRACE: an updated comparison**

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Although terrestrial water storage (TWS) plays an important role in the hydrological cycle, there are insufficient in-situ observations of its various components (soil moisture, snow and ice cover, surface and groundwater) available to assess the seasonal cycle of TWS over continental and sub-continental scales. Alternatively, basin-scale data of monthly variations in TWS diagnosed with the atmospheric-terrestrial water-balance approach (e.g., Seneviratne et al. 2004, Hirschi et al. 2006a) can be used to investigate TWS in large-scale river basins.

Here, updated basin-scale diagnostics of TWS (derived using ECMWF operational forecast analyses, see Hirschi et al. 2006b) are compared against TWS retrieved from the Gravity Recovery and Climate Experiment (GRACE) in river basins with recent streamflow measurements. In general, the atmospheric-terrestrial water-balance estimates and the analyzed standard resolution GRACE products agree on the phase of the TWS variations, and the amplitudes are similar for several of the considered domains.

### References:

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Climate, 17, 2039-2057.