



Interannual variations of river water storage in the lower Ob basin

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Temporal variations of water volume over inundated areas located in a large river basin have been determined using combined observations from a multisatellite inundation data set, the TOPEX/POSEIDON (T/P) altimetry satellite, and in situ hydrographic stations for the water levels over rivers and floodplains. We computed time-series of monthly maps of surface water volume over the period of common availability of T/P and the multisatellite data (1993–2004). The basin of the lower Ob was selected as a test site as it is the third largest contributor of freshwater to the Arctic Ocean. The surface water volume change is then analyzed and compared to the total water volume change derived from the GRACE RL04 monthly solutions over the 2002–2004 period. The total storage derived from GRACE is then separated into the main water reservoirs (surface storage change from multisatellite estimates, soil moisture contribution from model outputs, snow from GRACE inverse solutions) to isolate, by difference, the groundwater component.