



## **Estimation of hydrology in Europe using GRACE and GGP data**

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We present observations of the variations in the gravity field across central Europe over the time span of the GRACE satellite mission. The large-scale gravity time variations from GRACE clearly show a seasonal effect with minimum values in summer due to evaporation of the soil moisture. The resolution using GRACE is limited by the degree of truncation and the noise in the data. In previous studies we used Level 2, Release 1 data with  $n=20$  (1300 km) but here we experiment with higher truncation levels and newer processing. Our comparison is with ground-based SG (superconducting gravimeter) data from the GGP (Global Geodynamics Project) network at 7 stations. Although similar patterns are observed when the SG data are averaged, we find that the sign of the hydrology signal in the SG data depends on local effects at the various stations. This is clear when both solutions are compared to regional hydrology predicted using the GLDAS model, and we are able to quantify this effect. In presenting this paper, we appreciate the significant contribution of P. Schwintzer to the GGP effort through his leadership within the GFZ group.