



Upper bounds of deformation in the Upper Rhine Graben from GPS data - First results from GURN (GNSS Upper Rhine Graben Network)

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In September 2008, the Institut de Physique du Globe de Strasbourg (Ecole et Observatoire des Sciences de la Terre, EOST) and the Geodetic Institute (GIK) of Karlsruhe University (TH) established a transnational cooperation called GURN (GNSS Upper Rhine Graben Network). Within the GURN initiative these institutions are cooperating in order to establish a highly precise and highly sensitive network of permanently operating GNSS sites for the detection of crustal movements in the Upper Rhine Graben region. At the beginning, the network consisted of the permanently operating GNSS sites of SAPOS®-Baden-Württemberg, different data providers in France (e.g. EOST, Teria, RGP) and some further sites (e.g. IGS). In July 2009, the network was extended to the South when swisstopo (Switzerland) and to the North when SAPOS®-Rheinland-Pfalz joined GURN. Therefore, actually the GNSS network consists of approx. 80 permanently operating reference sites.

The presentation will discuss the actual status of GURN, main research goals, and will present first results concerning the data quality as well as time series of a first reprocessing of all available data since 2002 using GAMIT/GLOBK (EOST working group) and the Bernese GPS Software (GIK working group). Based on these time series, the velocity as well as strain fields will be calculated in the future. The GURN initiative is also aiming for the estimation of the upper bounds of deformation in the Upper Rhine Graben region.