



The usage of recursive parameter estimation in automated reference point determination

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The Geodetic Observatory Wettzell (GOW) is one of the core stations within the International Earth Rotation and Reference Systems Service (IERS). The observatory is operated by the BKG (Bundesamt für Kartographie und Geodäsie) and the FESG (Technische Universität München, Forschungseinrichtung Satellitengeodäsie) and hosts several geodetic space techniques like GNSS, SLR and VLBI. To combine these techniques the geodetic reference points of each technique and therefore the relative geometries (local ties) must be known with higher-level accuracy. To enhance the reliability of such local ties the Global Geodetic Observing System requires continued measurements and better automated determination of the reference points.

In 2013 the monitoring system HEIMDALL was installed at the GOW to operate the geodetic observations of the reference point of one of the new Twin radio Telescopes Wettzell (TTW) almost automatically. Between March and July 2013, 30 single epochs were carried out. The results of these epochs are combined by recursive parameter estimation. The advance of this process is the consideration of all former results and uncertainties. These combined results enable a reliable assessment to prove the stability of the reference point of the new radio telescope. Further observations are planned at Wettzell.