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Automated simultaneous local ties with GNSS and robot tachymeter

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We have used GPS-based local-tie measurements simultaneously with geo VLBI observations since 2008 during every geodetic VLBI session at Metsähovi. This system uses gimbal-mounted GNSS-antennas that are mounted on the reflector of the Metsähovi 14 m radio telescope. A similar system has been installed in 2013 at the Onsala 20 m radio telescope and been used for a large number of VLBI sessions, including e.g. the 15 day long CONT14 campaign. In order to verify the results of the two systems, we performed a dedicated measurement campaign in the framework of the SIB60 project, involving both Metsähovi and Onsala. During this campaign the local ties at the two stations were measured simultaneously during two VLBI sessions in August and September 2015 where both stations participated. The robot tachymeter monitoring system HEIMDALL was used for the automated classical monitoring of the telescopes at both stations. Moreover, additional local terrestrial measurements were performed several times to derive the full IVS-IGS local ties at both sites. The kinematic GPS measurement at the two stations were analyzed with two individually developed analysis programs.

We present here the preparations of the campaign, the measurement process, and preliminary results.

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