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## On the geometry of baselines suitable for UT1 estimation with VLBI Intensive sessions

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One hour single baseline VLBI sessions, so-called Intensives, are routinely observed to derive UT1-UTC with a short latency. The selection of baselines for VLBI Intensive sessions and their application for the determination of UT1-UTC is a complex task. Thus far, it has been understood that long east-west extensions are critical for the accuracy of UT1-UTC. In this presentation, we show, that the answer is not as simple as that.

We run Monte-Carlo simulations for a global 10° grid of artificial station locations and discuss the suitability of the individual baselines for UT1-UTC estimation based on the formal error of dUT1. The antennas are located at latitudes of -80° to 80° and longitudes of 0° to 180° and are assumed to have the same properties than the WETTZ13S telescope. The nine stations at longitude 0° on the northern hemisphere are defined as reference stations. In total, 2898 possible baselines between the reference stations and other artificial stations are investigated over one year based on monthly schedules to minimize potential seasonal variations. Thus, with this study, it is possible to derive a complete picture of which baselines are most suitable for dUT1 estimates.

In general, the findings show optimal global geometries concerning Intensives. For example, we can confirm that the IVS-INT1 baseline including the stations Kokee and Wettzell is among the best ones available. Furthermore, we show that north-south baselines are also sensitive to dUT1 as long as their orientations are not parallel to the Earth rotation axis. Moreover, we highlight that east-west baselines on the equator are not suitable for estimating dUT1 due to the lack of variety in right-ascension of the visible sources. Additionally, we highlight, that very long baselines are problematic due to the highly restricted mutual visibility.