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## High-cadence VLBI in Australia for an improved TRF in the southern hemisphere

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The accuracy and robustness of the International Terrestrial Reference Frame lies in the combination of the four space-geodetic techniques. Network imbalances, partly caused by geography and land coverage strongly favour the northern hemisphere in the number of observations and, to a less clear extent, in accuracies. This is evident in large tie discrepancies, for example in Katherine and Yarragadee in Australia, where results from the various techniques differ to a significant degree.

In this contribution we investigate the hypothesis that those discrepancies stem from deficiencies in the global combination of the various techniques, rather than from the individual observations. Specifically, we show that a regionally processed VLBI dataset is superior in its local station coordinate repeatabilities than when processed as part of the global network.

The Australian AuScope VLBI network has been operating for over 10 years, delivering higher cadence and partly more precise observations than the regular global IVS observations. It is our aim here to investigate whether a local comparison between VLBI and GNSS data in Australia can shed light into the mystery of significant tie discrepancies that are currently present in the ITRF for this region.