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Geodetic and astrometric VLBI observations to monitor radio source structure in the South

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Extragalactic radio sources selected for geodetic and astrometric VLBI observations are expected to have a core-dominated point-like structure. However, it is a well-known fact that extragalactic radio sources often exhibit time- and frequency-dependent intrinsic source structure at milliarcsecond (mas) scale, making them subjects of routine monitoring. In this talk, I will present mas resolution VLBI images of 164 radio sources at 2.3 and 8.4 GHz observed at multi-epoch in the Celestial Reference Deep South (CRDS) geodetic and astrometric VLBI sessions between 2018 and 2019. Along with the images, I will also present statistical results from the astrometric quality assessments of the sources indicating: 1. which sources are good candidates for geodetic and astrometric purposes and, 2. which sources should be avoided due to the source structure variability. However, the sources that show structure variability can also be interesting to monitor flux density variation at multi-epoch, for a range of research topics in high-energy astrophysics. The talk will conclude by showing that the CRDS geodetic and astrometric VLBI observations indeed can complement other ongoing radio surveys in the Southern Hemisphere.

Abstract field

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