



Contribution ID: 32

Type: Oral Presentation

ICRF sources: How good is the 'deep' southern sky

Thursday, 17 March 2016 11:15 (15 minutes)

The International Celestial Reference Frame (ICRF) are constructed using catalogs of extragalactic radio source (mainly quasars) positions measured at 2.3 and 8.4 GHz with the Very Long Baseline Interferometry (VLBI) technique. Most extragalactic radio sources exhibit spatially extended structures on milliarcsecond and sub-milliarcsecond scales which are variable in both time and frequency. These extended structures may contribute significant errors in the VLBI measurements that will introduce uncertainty in the source position measurements. Therefore, in order to define and maintain the celestial reference frame with the highest accuracy, efforts are required to map sources and to study their suitability as reference frame source on VLBI scales. We will present multi-epoch imaging results of the ICRF sources in the southern sky from the Celestial Reference Frame Deep South (CRDS) observing campaign from the IVS. Source morphology as well as source quality aspects will be discussed in the presentation which will give a better understanding of source behavior at 2.3 and 8.4 GHz observing frequencies with the VLBI technique.

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Session Classification: Oral5: Geodetic and Astrometric Results

Track Classification: 5: Geodetic and Astrometric VLBI Results