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Aspects of ICRF-3

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The Second Realization of the International Celestial Reference Frame (ICRF) used dual-frequency VLBI data acquired for geodetic and astrometric purposes from 1979-2009 by organizations coordinated by the IVS and various precursor networks. Since 2009 the data set has been significantly broadened, especially by observations in the Southern Hemisphere, and modeling of astronomical, geophysical and tropospheric effects has progressed. While the new southern data have ameliorated the north/south imbalance of observations, they appear to cause a systematic zonal declination change in the catalog positions. Over the three decades of the ICRF data set the effect of galactic aberration may be significant. Geophysical and tropospheric models also may affect the source positions. All these effects need to be addressed in preparation for ICRF-3.

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