

[초IT-02] Observational Studies with the Korean VLBI Network

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The Korean VLBI Network (KVN) as a world-first multi-frequency VLBI system is operated at four bands of 22, 43, 86, and 129 GHz simultaneously. The performances of both single dish and VLBI network were already confirmed through single dish researches and VLBI evaluation test observations. The VLBI common use of the KVN at 22/43 GHz bands has been started from this autumn. The combined network of KVN and Japanese VERA (KaVA) will start the common use from the first half of next year.

Here we present several observational results in the fields of star forming regions, late-type stars, and active galactic nuclei using the KVN and KaVA. The fringes of 44 GHz CH₃OH (Class I) masers were detected from 26 sources for the first time using the KVN and imaging observations are under performing. Simultaneous observations of SiO and H₂O masers toward about 1000 evolved stars showed the different maser properties between SiO and H₂O masers according to the evolutionary stages of AGB and post-AGB stars. The catalog of correlated flux densities were established from a 43 GHz (Q-band) survey of 637 extragalactic sources. At 22 GHz (K-band), flux density measurement and fringe survey for new sources were performed toward a large number of sources. In addition, the large program of KVN and/or KaVA under planning is introduced.