

[ID-07] Simulation of sources distribution for KVN Calibrator Survey (KVNCS)

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In order to observe weak radio sources with VLBI, their visibility phase should be corrected via the visibility phase of the nearby calibrators. For that, we need the phase reference sources. We have carried out the calibrator candidate selection to prepare the KVN Calibrator Survey (KVNCS). Prior to observation, we studied the source distribution at higher than -30° of declination. Our study were based on the VCS (VLBA Calibrator Survey) catalogue. Using 3799 sources from VCS, we estimated the expected flux of K and Q bands and selected sources which have flux stronger than 100mJy. First, we confirmed the spatial distribution of the calibrator candidates so that we found out how many sources we have to detect in the future.

When we performed the phase-referencing observation, in general, a separation angle between target source and calibrator should be 2° to 5° . Using Delauney Triangulation technique to calculate the effective area of each source, we compared with the area of spherical triangles. Through this calculation, we are able to confirm the region where we have to find more calibrators. We will carry out a test run on the sample of the candidates to verify and to monitor their flux in the first half of 2009.

[ID-08] First fringe detection, sensitivity estimation and operation mode of KVN

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We report the result of the KVN-VERA fringe detection. The experiments were carried out on 1st and 3rd November 2008. Further tests are done on 12th and 13th of March 2009. KVN Yonsei telescope and all available VERA telescopes participated in the observations. Strong water maser sources, W49N and Ori-KL and radio loud AGNs, NRAO150 and J2148+0657, were observed at K-band. In March 2009 two strong SiO maser sources, IK Tau and R Leo, were observed as well. For all observed sources in 2008, we detected the fringes at all baselines. Further tests are planned for K/Q band fringe detection and image sensitivity experiments in 2009. The scientific operation plan and the possible operation mode of KVN will be discussed also. In this talk, we introduce East Asian VLBI array where KVN will play important role. Especially EAVN observation at 22 and 43GHz is our interest. Sub mJy level imaging sensitivity which is comparable to NRAO FIRST survey sensitivity will be feasible with milli-arcsecond resolution. The scientific cases of AGN evolution will be discussed briefly.