

**Proposal Abstract:**

The OH megamaser is capable of providing valuable insights into the merging histories of galaxies and the overall history of star formation by tracing embedded starburst activities within the merging galaxies. Most known OH megamasers have come from a successful survey conducted by the Arecibo Telescope. As an updated version of Arecibo, FAST is the best tool for OH megamaser survey, due to its much better sensitivity and much larger sky coverage. Therefore, we have conducted a series of preparation for a coming FAST OHM survey, including an investigation of the infrared properties of OH megamasers, an evaluation of FAST's ability to detect OH megamasers, an Arecibo pilot survey on OH megamasers, and OH megamaser test observations conducted with FAST. Based on results of these works, we plan to perform an OH megamaser sky survey using FAST. As first step of our planning survey, here we propose one pilot searching on OHMs toward 10 sources. Observation results of the first step will may not only bring first FAST OHM, but also provide us important accumulated experience for future large FAST OHM survey, which should bring an increase of orders in quantity of OHM and also new OHMs at high redshift.