

## Poster: Disk-outflow system of G25.82-0.17 revealed by ALMA and KaVA observations

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We have started survey observations of the 22 GHz water maser sources associated with high-mass young stellar objects (HM-YSOs) as a part of the KaVA (KVN and VERA Array) large program (LP). The general summary of our KaVA LP will be presented by Sugiyama et al. In the first year (2016-2017), an imaging survey toward 25 HM-YSOs at 22 GHz has been conducted to check detectability and variability of the water masers. Monitoring observations toward selected 16 sources, including G25.82-0.17, will be conducted in the second year (2018~) to investigate 3D velocity field of water masers. To complement physical properties in the vicinity of HM-YSOs, we have also carried out ALMA cycle 3 observations of thermal molecular lines and continuum emissions toward 11 selected samples. In this presentation, we will focus on results from the ALMA and KaVA data toward one of the observed HM-YSOs, G25.82-0.17. We identified 1.3 mm dust continuum source powering water masers in the high angular resolution (0.25x0.23) ALMA data. High velocity ( $\sim 10$  km s $^{-1}$ ) SiO (J=5-4) emission was detected indicating the presence of outflowing gas from the source. In addition, a compact thermal methanol line is detected at the position of the continuum source. The methanol emission shows a velocity gradient, which is a possible signature of a rotating disk. In the future, we are going to investigate dynamical structure of jets/outflows and mass loss/accretion processes by combining ALMA results with measured proper motion of water maser by KaVA observations.

*Outflows and Disks*