R01a **Dust Cores around Sagittarius A* detected with ALMA**

Masato Tsuboi, Yoshimi Kitamura(ISAS), Makoto Miyoshi(NAOJ), Takahiro Tsutsumi(NRAO), Atsushi Miyazaki(Hosei Univ.), Kenta Uehara, Soichi Ishikawa(Univ. Tokyo)

The Galactic center region (GC) is the nucleus of the nearest spiral galaxy; the Milky Way. Sagittarius A^{*} (Sgr A^{*}) is a compact source from radio to X-ray located near the dynamical center, and associated with the central supermassive black hole of the galaxy. The Central cluster, which was discovered by IR observations, is centered at Sgr A^{*} and extends up to $r \sim 0.5$ pc. The cluster contains 100 OB and WR stars. The tidal force of Sgr A^{*} has a serious effect on the star formation in the GC. In addition, the strong Lyman continuum radiation from the cluster ionizes the ISM. It is an open question whether such massive stars can form in the vicinity of Sgr A^{*} or not. Thus, we have analyzed the Cy.0 data of Sgr A^{*} at 100, 250, and 350 GHz in the ALMA archive. Since the original observation aimed for the measurement of the time variation of Sgr A^{*}, the time span of the observation is longer than 7 hrs. The good UV coverage and " self-calibration ", which is popular in VLBI data reduction, give us to obtain dynamic range of over 2×10^4 in the resultant maps at 350 GHz. The high dynamic range is unprecedented in sub-millimeter wave and the angular resolution attains to $0.44" \times 0.38"$ at 350 GHz. Since the continuum emission is thought to mainly come from dust, we have identified "dust cores" using the clumpfind algorithm. Although a few cores are associated with the stars, many cores correspond to IR dark area rather than the stars. Therefore, the dust cores are most likely star-forming ones in the vicinity of Sgr A^{*}. The CMF is $dN/dM \propto M^{-0.5}$. This slope is consistent with the top-heavy IMF of the cluster.