

Q08a **Cloud-cloud Collision in the Galactic Center 50 km s⁻¹ Molecular Cloud**

Masato Tsuboi (JAXA), Tomoyuki Morimitsu (Univ. Tokyo), Atsushi Miyazaki (KASI)

In the recent two decades, the young massive clusters (YMCs), Arches cluster, Quintuplet cluster, and Central cluster, have been found in the Central Molecular Zone by IR observations. The YMCs are presumably the "Galactic analogues" of the super star clusters often observed in nearby galaxies. Because the CMZ is very crowding, the YMCs must be forming under external interventions for example cloud-cloud collision and/or interaction with SNRs. The 50 km s⁻¹ Molecular Cloud (50MC) is a most conspicuous molecular cloud in the CMZ and includes several compact HII regions. We have observed the structure of the 50MC in thermal SiO, and H¹³CO⁺ emission lines using the NRO 45-m telescope. We found a half shell-like feature with high T(SiO)/T(H¹³CO⁺) ratio in the cloud. The feature is identified as an U-shape feature with a velocity width of 30 km s⁻¹ on the $l-v$ diagram. Possible mechanisms explaining the observed shell-like feature may be a cloud-cloud collision and SNR in the cloud. The feature is not seen in radio continuum. The observed properties may be consistent with those expected for cloud-cloud collision. In this paper, we will discuss these in detail. The study may provide key information to understand star-burst phenomena as a fundamental process.