

**R43b SMA Observations of CO 2-1 Emission in Central Region of NGC 4258**

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We present results of observations toward CO 2-1 emission in central region of the Seyfert 2 galaxy NGC 4258 with the Submillimeter Array (SMA). Recently, a Seyfert 2 galaxy M51 shows that higher excitation CO lines are concentrated in the center, although CO 1-0 is associated with its galactic arms. It is important to know whether this trend is in fact common for Seyfert galaxies. NGC 4258 is a nearby spiral galaxy and exhibits a subpc-scale edge-on disk, surrounding its central engine. Major axis of the subpc-scale disk is along the east-west direction although the P.A. of the host galaxy is  $152^\circ$ , which indicates a significant difference between its galactic plane and the rotating plane of the nuclear disk. Until now, nobody see a link between the host galaxy and the nuclear disk in NGC 4258. The CO 1-0 emission in NGC 4258 is associated with the inner parts of its anomalous arms of NGC 4258 but not to be detected from the center. Our CO 2-1 maps also show similar morphology and velocity structure to past CO 1-0 maps and no concentrated CO 2-1 emission is seen in its center, unlike M51. Also, we attempted to model a velocity field and subtracted the model from the velocity map of CO 2-1. We see a clear velocity gradient along east-west direction near the nucleus, which implies the subpc-scale disk. Another possible explanation for the velocity gradient is due to a jet, or another anomalous arm elongated in disk along almost east-west direction in center. At the meeting, we will discuss the CO gas distribution and kinematics of the central region of NGC 4258.