

## ALMA for Interstellar Matter

M. Saito,<sup>1</sup> K. Saigo,<sup>1</sup> K. Tachihara,<sup>1</sup> and S. K. Okumura<sup>1</sup>

<sup>1</sup>East Asian ALMA Regional Center, National Astronomical Observatory of Japan, Japan

Atacama Large Millimeter-submillimeter Array (ALMA)[1] will start early science observation in 2011 and provide unprecedented power to address various issues on interstellar matter. The sensitivity of ALMA in spectral observations covering frequency ranges of 30-900 GHz (Fig. 1) is typically 10-30 times higher than that of the existing millimeter and submillimeter arrays. Its high spatial and spectral resolution will enable us to image detailed features of ISM and to reveal kinematics of ISM. Its high sensitivity enable us to detect very weak emission such as new molecular transitions toward star forming regions, protoplanetary disks, planetary nebulae, Galactic center and even galaxies. These ALMA data can be compared directly with theoretical studies enriching our understanding of the interstellar physics. ALMA can also diagnose molecular abundance, temperature, density and kinematics of many species with high precision.

The East-Asian ALMA Regional Center (EA-ARC) will provide user support in many aspects. We present the latest status and information for the observing proposal of ALMA.

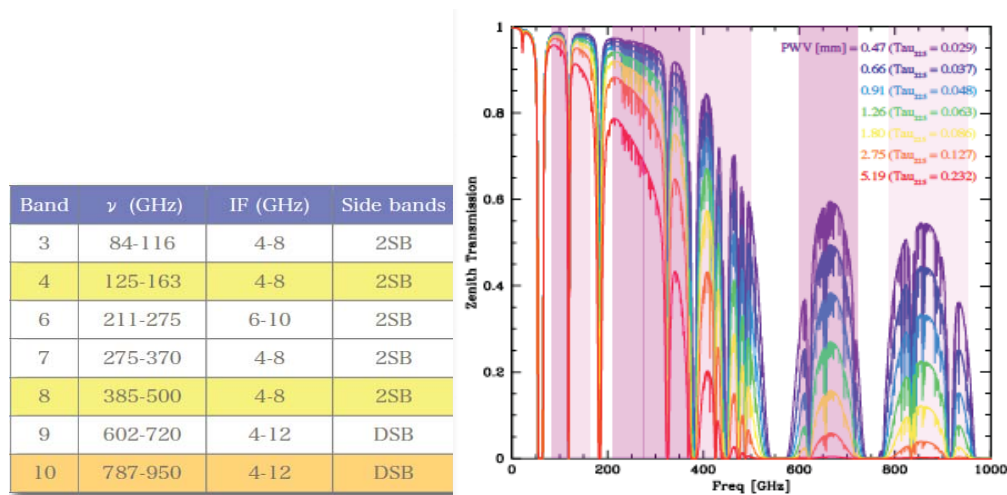


Figure 1: Left) Current frequency coverage of ALMA. Right) Atmospheric transmission in the ALMA frequency coverage given precipitable water vapor in atmosphere.

## References

- [1] S. Iguchi et al. 2009, PASJ, 61, 1