

## ALMA observations of the solar chromosphere on the polar limb

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We report results of the Atacama Large Millimeter/sub-millimeter Array (ALMA) observations of the solar chromosphere on the southern polar limb. From Cycle-4 of the ALMA proposal period, solar observation capability became open to the community. ALMA has provided us unprecedented high spatial resolutions (approximately 2.0 arcsec) in the millimeter band at 100 GHz frequency with very high cadence (2 sec). The results are as follows: (1) A clear solar limb in the millimeter band is located at approximately 5 arcsec above the photosphere. Many dynamic saw-tooth patterns are identified on the chromospheric edge. They are co-located with the similar structure in the EUV emission taken by SDO/AIA 171 band and can be interpreted as low-temperature high-density materials. (2) A blob-ejection event is found. By comparing with the UV images taken by IRIS Mg slit jaw, the trajectory of the blob is located along the spicular patterns. The ejection is accompanied by a brightening jet event at the footpoint area.

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