

The first observation of ozone enhancement in the lowermost atmosphere over China from a spaceborne ultraviolet spectrom

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This is the first report of observation from space using ultraviolet radiance for significant enhancement of ozone in the lowermost altitudes (0 to about 3000 m) over East and Central China. The recent retrieval products of the Ozone Monitoring Instrument (OMI) onboard EOS/Aura satellite revealed the spatiotemporal variation of the ozone distribution in the lowermost troposphere [Liu et al., ACP, 2010]. The ozone enhancement over East and Central China was clear in June and July every year, associated with enhancement of CO observed from Measurements Of Pollution In The Troposphere (MOPITT) and hotspots taken from MODerate resolution Imaging Spectroradiometer (MODIS). It suggests that considerable part of the enhancement can be attributed to the emissions of ozone precursors from residue burning after harvesting winter wheat in this area. Ozone enhancement was also observed in autumn and early winter over East and Central China every year, sometimes not accompanied by signals of burning, It implies that CO emissions from industrial activity, automobiles and coal burning for heating would affect on ozone production rather than biomass burning in winter.

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