

WIND Campaign over Japan in 2007 -Lithium release experiment from rocket-

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Momentum transfer through coupling of neutral atmosphere with plasma is a key process of atmospheric circulation and super rotation in the low latitude thermosphere, and a medium scale traveling ionospheric disturbance (MS-TID) occurring in the mid-latitude ionosphere. WIND (Wind measurement for Ionized and Neutral atmospheric Dynamics study) is a rocket experiment to investigate the neutral-plasma coupling processes in F-region. JAXA/ISAS launched successfully S-520-23 sounding rocket from Kagoshima Space Center (KSC) in the evening of September 2, 2007. The rocket installed Lithium release canisters as well as instruments for plasma drift velocity, plasma density and temperature and its fluctuations, and electric and magnetic fields. The Lithium gas was released at altitudes between 150km and 300km and scattered sunlight by resonance scattering with wavelength of 670 nm. The neutral winds in the thermosphere are estimated from the movements of Lithium clouds observed by CCD imagers on ground. From the diffusion of lithium clouds, we estimate also neutral density and temperature in the thermosphere.