

Investigation of the thermospheric mass density variations below 200 km

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Since both the effects from the lower atmosphere and in-situ forcing are significant in the thermospheric region between 100 and 200 km altitude, the thermosphere in the region shows complex variations depending on various conditions. In addition, observations of the thermosphere (neutral atmosphere) between 100 and 200 km are very few compared to the upper thermosphere (above 300 km) and the ionosphere. These make it difficult to improve reliability of empirical and numerical models. Observations from Low Earth Orbit (LOE) satellites would be essential for building up available data sets in the thermospheric region between 100 and 200 km altitude. We will introduce our research project to investigate the thermospheric mass density variations in the 100-200 km altitude region with the LOE satellite, e.g., Tsubame (SLATS), data and a whole atmosphere GCM.

Keywords: thermosphere, mass density, Low Earth Orbit (LOE) satellite, GCM