

Thermospheric neutral density exhibits seasonal variation with maximum during equinox seasons, a primary minimum near June solstice and a secondary minimum near December solstice. The amplitude and phase of this seasonal variation change from year to year, and possible mechanisms of this seasonal variation are the sun-earth distance, large-scale circulation, lower atmospheric forcing, and geomagnetic activity. Using thermospheric neutral density data derived from 5000 space objects from 1967 to 2007, with perigees lower than 600 km, statistical relations between amplitude and phase of seasonal variation of density with geophysical conditions such as solar activity, altitude, and geomagnetic activity are examined. These statistical relations provide information about the mechanisms of the seasonal variation.