

A SOLAR TERMINATOR WAVE IN THERMOSPHERIC WIND AND DENSITY SIMULTANEOUSLY OBSERVED BY CHAMP

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A solar terminator wave has been revealed in thermospheric wind and density simultaneously observed by CHAMP. The wind terminator wave is out of phase with the density terminator wave. But both have wavefronts about 30° inclined to the terminator line at low latitudes, and wavelengths ranging between 3000-5000 km. They show a clear dawn-dusk asymmetry, with more pronounced wave signatures forming at dusk. Terminator wave is indiscernible in the dawnside wind. Most wave structures are observed at night, with some extension to the sunlit region around solstices. The midnight density maximum is seen to be closely connected to terminator wave structures, hence indicating a possible role of terminator waves in its formation.

Thermosphere, solar terminator, mesosphere-thermosphere coupling

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