

Seasonal variation of the equatorial wind jet at 250 km and 400 km: GOCE and CHAMP observations

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By using long-term in-situ wind observations from the GOCE satellite at 250 km, and the CHAMP satellite at ~400 km, this study examine the seasonal variation of the equatorial wind jet previously reported using short-term CHAMP and DE-2 satellite observations. The results show that the wind jet exists at both altitudes, and experiences similar seasonal variations. The wind jet is found to be strongest around the September equinox, and disappears around the June solstice at both altitudes. The jet shows little solar cycle and geomagnetic activity dependence. These seasonal variations are interpreted in the framework of ion-neutral interaction.

Keywords: wind jet, thermosphere wind, ion-neutral coupling