



The middle latitude trough observed by FORMOSAT-3/COSMIC and ground-based GPS receivers along the Poland longitude during 2007-2012.

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This research reports the ionospheric middle latitude trough along the Poland longitude (21 [U+3002] E) by using the electron density profile derived from the GPS radio occultation experiment onboard FORMOSAT-3/COSMIC (F3/C) satellites and total electron content recorded from ground-based GPS receivers during 2007 to 2012. Results show the middle latitude trough pronounced in the whole day in the winter hemisphere, as well as 00:00-10:00 LT in the summer hemisphere and in the northern/southern hemispheres in M- and S-month. The trough minimum position in general shows on +/-60 magnetic latitude in both hemisphere in nighttime and polarward slightly in daytime.