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POSTER

Pulsating particle precipitation, VLF chorus and Pc5 waves: Case study November 24, 2006

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One event of the whistler-mode VLF chorus burst occurrence and the simultaneous multi-points ground-based observations of pulsating energetic electron precipitation (riometer absorption) and Pc5-range ULF geomagnetic pulsations in Scandinavia has been analyzed and compared with the fluctuations in the solar wind and IMF.

It was found that during the VLF chorus burst occurrence (04-05 UT) there were observed two stable maxima (near 2 mHz and at 3-4 mHz) in the geomagnetic pulsations spectra. However, the maximum in riometer absorption spectrum coincided with the higher (3-4 mHz) geomagnetic pulsation maximum in the first half-hour interval, but in the following half-hour interval – with the lower (2 mHz) ULF geomagnetic pulsation maximum. The spectra of the chorus intensity variations were relatively similar to the riometer ones. In the first discussed time interval the solar wind dynamic pressure variations were turbulent in the large frequency range of $\sim 1.5 - 4.0$ mHz with maximum at about of 2-3 mHz. However in the second time interval the solar wind dynamic pressure demonstrated the oscillations with the clear maximum at 2 mHz. The same maximum was observed in the riometer, geomagnetic pulsation and VLF chorus data. We interpret that results as the VLF wave grow rate modulation by the compressional Pc5 range ULF wave exiting due to solar wind pressure oscillations. The 2 mHz geomagnetic pulsations in the first interval were, probably, by the Alfven resonant nature which did not modulate the VLF chorus exiting.