



## **ULF Pc5 signature of the 2003 superstorms recovery phases**

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The analysis of the globally distributed ground-based magnetometer data during superstorms in October–November 2003 showed that the wave signature of these storms recovery phases was non-typical. As usually, there should be observed the “classical” morning ULF Pc5 resonant pulsations. However, only the October 29, 2003 storm recovery phase looked like that. The October 31, 2003 storm recovery phase demonstrated the generation of the quasi-monochromatic unusually strong (up to 600 nT) Pc5 (2–5 mHz) pulsations observed with the similar intensity, spectra and polarization in the very wide ( $\sim 20^\circ$ ) latitude region, that is non-typical for the field-line-resonance (FLR) wave structure. In the 21 November, 2003 storm recovery phase the Pc5 range ULF pulsations looked like the superposition of two different types oscillations: the FLR waves ( $f \sim 2$  mHz) and non-resonant ( $f \sim 3$  mHz) pulsations, probably, associated with the field aligned currents (FAC) quasi-periodic fluctuations. These morning pulsations were accompanied by the night-evening irregular Pi3 type pulsations at the similar frequency range, but with the different spectral distribution. The spectra of the morning Pc5 pulsations showed some similarity with the IMF By spectra; however, the spectra of the night side Pi3 pulsations showed some similarity with the spectra of the solar wind density fluctuations. The possible solar-terrestrial interactions are discussed.