

Characteristics of energetic electron precipitation associated with chorus emissions and pulsating aurora observed at Syowa Station: A case study on 17 May 2007

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It has been generally accepted that chorus emissions can be excited by the electron temperature anisotropy in the inner magnetosphere [e.g., *Tsurutani and Smith, 1974, JGR*], and play an important role in acceleration and loss processes of energetic electrons [e.g., *Miyoshi et al., 2003, JGR*]. In particular, pitch angle scattering through wave-particle interactions with whistler mode chorus waves is an important loss process for magnetospheric energetic electrons from a few hundred eV to MeV range [e.g., *Lam et al., 2010, JGR*]. Pulsating aurora consists of modulated energetic electrons from a few to several tens of keV [e.g., *Nishiyama et al., 2011, JGR*]. Previous studies of pulsating auroral luminosity show a clear correlation with chorus emissions [e.g., *Nishimura et al., 2010, Science*]. However, a detailed correlation study between auroral luminosity, chorus emissions, and energetic electron precipitation has not been performed. We examine characteristics of energetic electron precipitation with several tens of keV by using imaging riometer observed at Syowa Station in Antarctica on 17 May 2007. An enhancement of distribution of energetic electron precipitation is detected after 02:58 UT on 17 May 2007. This enhancement shows a correlation with an enhancement of chorus emissions and pulsating aurora observed by all-sky TV camera (ATV). We show a preliminary result of characteristics of energetic precipitation with several tens of keV and a correlation analysis.