



Multiband chorus waves in Earth's magnetosphere

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In this talk, I will present our latest work about multiband chorus waves in Earth's magnetosphere. We reported the multiband chorus waves with THEMIS waveform data for the first time. In the multiband chorus event, the upper-band waves showing up at the harmonics of lower-band waves. Based on case study, PIC simulations, and theoretical analysis, multiband chorus waves are well explained by the lower band cascade mechanism. In this scenario, the upper-band wave is driven by the coupling between the electrostatic and electromagnetic components of nonparallel lower-band chorus waves. A statistical study about multiband chorus is performed to show that this is a very common phenomenon in the magnetosphere. At last, we will show a new statistical study about the power gap of chorus waves, and give some discussions about the role of multiband chorus in understanding the power gap.