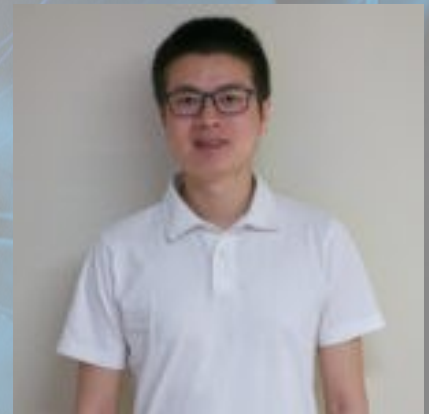


**2019—2020 SPACE PHYSICS SEMINAR SERIES**

## **Scale Size of Magnetospheric Plasma Waves (Chorus and EMIC Waves)**

Chorus and Electromagnetic ion cyclotron (EMIC) waves are two of the most important waves which affect the Earth's radiation belt dynamics via wave-particle interactions. By pitch angle scattering trapped particles into the loss cone, Chorus and EMIC waves can precipitate electrons and ions to the upper atmosphere, forming pulsating and proton aurorae. Extensive studies have revealed when, where and how often these waves are generated. However, it is still not well known what are typical sizes of them and how do they vary with L shell (radial distance of the field line to the center of the Earth at the equator), magnetic local time and magnetic latitude. By taking the full advantage of simultaneous multi-satellite wave measurements from two Van Allen Probes, three inner Time History of Events and Macroscale Interactions during Substorms (THEMIS) spacecraft, we calculate wave coherent scale size of Chorus and EMIC waves based on waveforms, in the radial and azimuthal direction. In this talk, I will introduce the typical features of Chorus and EMIC waves, review previous studies on their scale sizes and present our recent results on this topic.

**Thursday, October 24th**

4:00-5:00 p.m.

725 Commonwealth Ave | Room 502

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