

Understanding the multiscale magnetospheric plasma processes using the kinetic approach

During geomagnetic active times, magnetic fluxes are accumulated in the tail lobes at the magnetohydrodynamic scale. The magnetotail current sheet thins to electron scale to trigger magnetic reconnection. The reconnection ejecta, known as bursty bulk flows, transport energetic particles toward the inner magnetosphere, forming injection fronts at the mesoscale. The injected particles provide free energy to a variety of ion and electron scale waves, causing particle acceleration and precipitation in the inner magnetosphere. In this presentation, I will discuss the use of kinetic approach in exploring three key processes in this chain of magnetospheric events, including the formation of thin current sheets, energy cascade around injection fronts, and electron precipitation by ion scale waves in the inner magnetosphere.

**Thursday, October 26th**

4:00-5:00 p.m.

725 Commonwealth Ave | Room 502

Xin An

University of California, Los Angeles