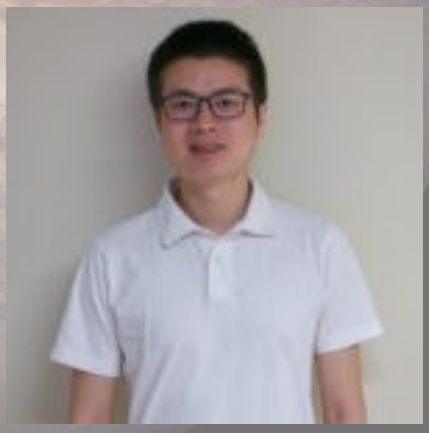
BOSTON UNIVERSITY

Boston University College of Arts & Sciences
Center for Space Physics

2021—2022 SPACE PHYSICS SEMINAR SERIES

Energetic Proton and Electron Distributions at Jupiter

The plasma environment in the Jovian magnetosphere is known to be intense and complex. The primary source of these energetic charged particles is found to be from volcanical activities at Jupiter's moons, especially the Io, which is able to erupt materials at an rate of ~ 1,000 kg/s. A portion of the erupted materials can be ionized and accelerated to MeV or even GeV energies in the Jovian magnetosphere. A well understanding of energetic charged particle distributions, including pitch angle distribution and phase space density profile, will be greatly helpful for identifying their source (e.g., external source versus local acceleration) and loss mechanisms. In this talk, I will present our recent work on the global distributions of energetic protons (tens of keV to several MeV) and electrons in the inner and middle Jovian magnetosphere (within ~50 Jovian Radii near the equator), using more than four years observational data from the Juno mission. Possible physics behind the statistical results will also be discussed.



Thursday, October 28th

4:00-5:00 p.m.

725 Commonwealth Ave | Room 502

Xiaochen Shen

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