

# JOINT TUFTS/MIT COSMOLOGY SEMINAR

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## *Magnetospheric Interactions: From Earth to Pulsars*

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The formation of compact objects—neutron stars and black holes—and their evolution in stellar systems make them a unique resource to study their emission and interaction with the interstellar medium (ISM), planetary ionospheres and magnetospheres including Earth. To understand the phenomenon above and the mystery of the universe, I started my career by studying the Earth's atmosphere. Inspired by the Earth's magnetosphere, I looked further towards more extreme magnetic environments, including the magnetosphere of pulsars. Currently, I study metal composition of the ISM, which perfectly bridges the ionospheric and pulsar sciences. I will talk about the whole picture of my research, focusing on three main aspects:

Extract science from the pulsar library I have built for Magellanic Cloud pulsars, classify neutron stars and black holes in M33 and IC10, and establish Si gas and dust absorption columns towards different lines of sight in the Galactic Bulge and eventually with future X-ray telescopes in Galaxies of the Local Group. These three important topics define my interest and plans: e.g., search for pulsars near the Galactic Center (GC) which would provide exciting opportunities for probing gravitational potentials, axions, and magnetoionic environments near the GC.

Tuesday, January 31, 2023, 2:30 pm

574 Boston Ave, Room 402

Tufts University

Refreshments at 2:00 outside room 304