## **Boston University College of Arts & Sciences Center for Space Physics**

## 2023-2024 SPACE PHYSICS SEMINAR SERIES

## The Origin of Nonthermal Particle Acceleration in **Magnetic Reconnection**

Magnetic reconnection occurs ubiquitously in the universe and is often invoked to explain fast energy release and particle acceleration in space, solar and astrophysical environments. Much of the recent progress is the physics of particle acceleration and the origin of the nonthermal powerlaw spectra. We discuss processes including the low-energy injection and further acceleration that generates a power-law energy spectrum. While earlier studies suggest that an

escape process is needed for the formation of the power-law distribution, we show that this statement is not correct. Finally, we discuss the frontier problems for understanding particle acceleration in 3D reconnection and building macroscopic models.



## Thursday, October 5th 4:00-5:00 p.m.

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725 Commonwealth Ave | Room 502

Fan Guo Los Alamos National Laboratory