

Plasma Physics Seminar

Physics & Astronomy Building (PAB) Room 4-330

Via Zoom: <https://ucla.zoom.us/j/92785449357?pwd=SVBTSko3bTdEUW03dzQwNks1Q2IKZz09>

Friday, March 1, 2024 at 12:30PM

Lunch will be served at 12:00PM

Pulsed-Power-Driven Plasma Physics at MIT

Jack Hare (MIT)



Abstract: I will present the program of research at the new pulsed-power driven plasma physics group at MIT. The motivation for our fundamental physics investigations is to study the processes which enable the conversion and dissipation of energy between different forms within the plasma, and I will illustrate some of these processes with results from pulsed-power-driven experiments on magnetic reconnection and magnetized turbulence. These results lead to current and future research directions, such as radiatively cooled magnetic reconnection experiments on Z and the new PUFFIN long-pulse facility nearing completion at MIT, and require the development of new diagnostics, such as the imaging refractometer.

Bio: Jack D. Hare is the Gale Career Development (1929) assistant professor in the Department of Nuclear Science and Engineering at MIT. He graduated with First Class honours from the Natural Sciences Tripos at the University of Cambridge in 2011, followed by a Master's degree at Princeton University from the Graduate Program in Plasma Physics in 2013. He carried out his PhD research at Imperial College London, supervised by Prof. Sergey Lebedev on the 1.4 MA MAGPIE generator, graduating in 2017, followed by postdoctoral appointments at Imperial College (2017-2019 and 2020) and the Max Planck Institute for Plasma Physics in Garching, Germany (2019). He started his new research group based around the PUFFIN pulsed-power generator at MIT in 2021. He was received an NSF CAREER award to study magnetized turbulence in 2023.