

Plasma Physics

Saturday, 21 January 2023 09:45 (1 hour)

9:45 - 10:15: Alex Leviness, "What's a Stellarator?"

A stellarator is a type of device that magnetically confines a plasma so that nuclear fusion can occur. After the tokamak, it is the second most popular option for a fusion reactor design, and the past several decades have seen major advances in the design and construction of these devices. I will cover some basics of fusion, the advantages and challenges of the stellarator, and my own experience doing research on the largest stellarator in the world, Wendelstein 7-X.

10:15 - 10:45: Fatima Ebrahimi, "A Solar-flare Rocket"

A new type of rocket engine propels a spacecraft by taking advantage of the physical mechanism that accelerates solar flares, so-called magnetic reconnection. The engine applies magnetic fields to force particles of electrically charged gas, or plasma, to shoot out the back of a rocket with high velocity, causing forward momentum. I will present some basics of the magnetic reconnection process and how this type of rocket engine was inspired by my research in fusion energy.

Presenters: LEVINNESS, Alex (PPPL); EBRAHIMI, Fatima (PPPL)

Session Classification: Workshops