plasmapy

SULI Computational Workshop

Peter Heuer & Nick Murphy
(on behalf of the PlasmaPy Community)

We acknowledge support from:

NSF

DEPARTMENT OF ENERGY · UNITED STATES OF AMERICA

NASA

astropy-powered
astropy.org

python powered

About me

plasmapy

- Grew up in Michigan
  - Side effect: I really like suspension bridges 🌉
- Went to University of Michigan for undergrad
  - Side effect: I volunteered at a rabbit sanctuary 🐇
- Went to University of Wisconsin for grad school
  - Side effect: I began reading science fiction poetry 🚀
- Now work at Center for Astrophysics in Cambridge, MA
- I'm happy to talk with you about:
  - Python! 🐍
  - How to contribute to an open source project
  - Puns about computational magnetohydrodynamics 😹 😹 😹 😹

First Plasma Hack Week is June 28 – July 2!

- Mix of a summer school and a hackathon
  - Tutorials
  - Hack sessions
- Website: https://hack.plasmapy.org/
  - Registration
  - Schedule
  - Discord group
- So far 320 registrations
  - We were expecting ~50–75! 🙀 🙀 🙀 🙀 🙀

What is PlasmaPy?

plasmapy

Mission

*To grow an open source **software ecosystem** for plasma research & education*

https://www.plasmapy.org/

Many ways to be part of the community

- Come to Plasma Hack Week next week!
- Come to PlasmaPy's...
  - Office hours (Thursdays at 2 pm EDT, except July 1)
  - Community meeting (Tuesdays at 2 pm EDT, except June 29)
- Join our Element chat
- Request new features on GitHub
- Organize community events
- Contribute!

Today's plan

Part 1: getting started with PlasmaPy (Nick)

- Units and constants with Astropy
- Representing plasma particles with PlasmaPy
- PlasmaPy's formulary subpackage

Part 2: proton radiography with PlasmaPy (Peter)

- Why proton radiography?
- Making synthetic proton radiographs

Options to follow along

- If you completed installation instructions for your computer
  - Open Anaconda Navigator
  - Go to “Environments” tab
  - Click on arrow next to `SULI` environment
  - Select “Open with Jupyter Notebook”
  - Under “New”, select “Python 3”
- Open Binder link (posted in #computational on Discord)
- Use Google Colab (discussed in #computational)