plasmapy

SULI Computational Workshop

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on behalf of the PlasmaPy Community
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We acknowledge support from:

With thanks to Peter Heuer and
Jayden Roberts for the second notebook
and corresponding functionality!

astropy-powered
astropy.org

python powered

My background

- Graduate school in astronomy (University of Wisconsin) 🌌
  - Simulated reconnection in a laboratory astrophysics experiment
- Postdoc and researcher since 2009 (Center for Astrophysics) 🔭
  - Studied solar physics ☀️ and fundamental plasma science ⚡
- Last 7.5 ± 0.7 (3σ) years
  - Contributing to PlasmaPy ✨🐍
  - Advocating for open & reproducible plasma science 🔓🧪
- Hobbies
  - Playing video games from 1988 👾
  - Adding cat emojis to science presentations 😾
  - Lamenting the dire shortage of science fiction musicals 🎼🛸

Following along in Google Colab

- We'll post the notebook link in the chat, or:
- Go to SULI intro course website at:

  https://suli.pppl.gov/2026/course

- Go to schedule for today (Day 9; Thursday, June 11)
- Click on **notebook 1** by Computational Workshop 1

What is PlasmaPy?

plasmapy

Mission

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

https://www.plasmapy.org

Things we can do with PlasmaPy...so far!

- ⚛️ Create `Particle` and `ParticleList` objects
- 🧮 Calculate plasma parameters
- 💫 Track particle motions in EM fields
- 📉 Represent plasma equilibria
- 📈 Analyze data from certain lab plasma diagnostics
- 🌊 Find plasma wave dispersion relations
- 🌡️ Model ion temperatures in solar wind plasma
- 🌐 Find magnetic null points

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