plasmapy

PlasmaPy Showcase

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What is PlasmaPy?

plasmapy

Mission

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

https://www.plasmapy.org

Version 0.8 was released last week!

plasmapy

stable

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FIRST STEPS

Installing

Getting Started

Examples

Feedback and Communication

How to Contribute

Code of Conduct

Acknowledging and Citing

PACKAGE FEATURES

Analysis & Diagnostic Toolkits

Dispersion

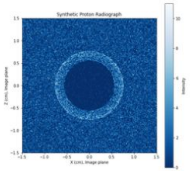
» PlasmaPy Documentation

PlasmaPy Documentation

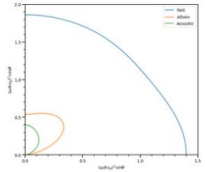
PlasmaPy is an open source community-developed core Python 3.8+ package for plasma physics currently under development.

Example highlights

Using PlasmaPy Particles



Creating Synthetic Charged Particle Radiographs by Particle Tracing



Dispersion: A Full Two Fluid Solution

https://docs.plasmapy.org

PlasmaPy subpackages

`plasmapy.particles`

- Object-oriented & functional interfaces to information on ions, electrons, and fundamental particles

`plasmapy.formulary`

- Commonly needed formulas for plasma parameters and transport coefficients

`plasmapy.dispersion`

- For dispersion relation solvers for plasma waves & instabilities

PlasmaPy subpackages

`plasmapy.analysis`

- Analysis techniques for simulations, experiments, & observations

`plasmapy.diagnostics`

- For representations of plasma diagnostics such as Langmuir probes & Thomson scattering, as well as synthetic diagnostics

`plasmapy.plasma`

- For base classes to represent different plasmas

`plasmapy.simulation`

- To include building blocks of plasma simulations and a particle tracker

Many ways to be part of the community

- Come to PlasmaPy's...
  - Community meeting (Tuesdays at 2 pm ET)
  - Office hours (Thursdays at 3 pm ET)
- Join our Element chat
- Request new features on GitHub
- Contribute!
- Participate in community events like Plasma Hack Week

Today's demo will cover:

- `astropy.units`
- `plasmapy.particles`
- `plasmapy.formulary`