

Abstract Submitted
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PlasmaPy for HEDP Regime¹ KHALIL BRYANT, CAROLYN KURANZ, Univ of Michigan - Ann Arbor, DOMINIK STACZAK, Institute of Plasma Physics and Laser Microfusion, Warsaw, Poland, ERIK EVERSON, University of California, Los Angeles, NICHOLAS MURPHY, Smithsonian Astrophysical Observatory — PlasmaPy is a Python package being developed to foster an open source software ecosystem focused around plasma physics research and education. The high-energy-density (HED) physics regime refers to systems with an energy density >1 Mbar or 10^6 atm. In this regime, plasmas behave differently from ideal plasmas and require additional functionality to describe them. For example, ionization, magnetic fields, and relativity can be important in this regime. I am tasked with adding functionality to PlasmaPy that is relevant to HED plasma physics. One example is the Saha equation: which estimates the ratio of ions of a plasma in one ionization state to those in another. This becomes more accurate in the HED regime.

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Khalil Bryant
Univ of Michigan - Ann Arbor

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