

Abstract Submitted
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Predictions for in situ Observations of Turbulent Power Spectra within the Alfvén Critical Point¹ KRISTOPHER KLEIN, Space Science Center, University of New Hampshire, BENJAMIN CHANDRAN, Space Science Center and Department of Physics, University of New Hampshire — In preparation for the launch of Solar Probe Plus, which will make unprecedented *in situ* measurements of the solar wind in the inner heliosphere, we present a series of predictions for these observed turbulent spectra. A number of mechanisms unique to the near-Sun solar wind will make the task of interpreting measurements quite difficult, including an imbalanced flux of turbulent Alfvénic fluctuations with possibly distinct spectral power laws, the possible violation of the Taylor hypothesis, and the rapidly varying motion both radial and transverse to the spacecraft. We incorporate these mechanisms into analytic predictions for the observed power spectra, as well as into previously validated techniques for creating synthetic time series from a spectrum of linear eigenmodes. These predictions for the observed spectra may be used to distinguish between competing turbulence theories which may impact solar wind acceleration and the heating of the Sun’s corona.

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