

Investigating Prominence Turbulence with Hinode SOT Dopplergrams

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The motions of plasma in quiescent prominences, as revealed by Hinode observations, display highly complex flows across a wide range of spatial and temporal scales. Using H- α dopplergrams from Hinode SOT, we investigate the spatial and temporal fluctuations of the line-of-sight velocity of a prominence observed on 2008-09-29 to determine its turbulent characteristics. Analysis of the velocity increments reveals hints of both the Kolmogorov ($r^{2/3}$) and the Kraichnan-Iroshnikov ($r^{1/2}$) scaling for magnetohydrodynamic turbulence. The results from this analysis will be of great importance for determining the spatial and temporal scales over which energy is injected into the prominence, transported through the prominence and dissipated in the prominence.