

Abstract Submitted  
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**Ion-Neutral Collisions and the Propagation Distance of Interstellar Turbulence**<sup>1</sup> STEVEN SPANGLER, University of Iowa — Plasma turbulence exists throughout the pervasive “Diffuse Ionized Gas” (DIG) phase of the interstellar medium. The generators of this turbulence are unknown, but are widely believed to be supernova remnants. The DIG is a partially ionized plasma, since at least half of the helium is neutral, and perhaps a small fraction of the hydrogen. The damping rate of MHD waves on neutral helium in the DIG is of order  $(3 - 6) \times 10^{-12}$  Hz. With a corresponding Alfvén speed of 23 kilometers per sec, interstellar turbulence should be strongly damped within a parsec of its sources. This result is strongly discordant with the observation that turbulence in the DIG seems relatively uniformly distributed and is found far from obvious turbulence “generators” such as supernova remnants and star formation regions. I discuss possible ways in which turbulence could be generated or propagate through the highly lossy interstellar medium.

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