

ASTROPHYSICS SEMINAR SERIES

Pulsars: unique probes of the interstellar turbulence

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The interstellar medium is turbulent, with the density fluctuations induced by turbulence spanning over a broad range of length scales. Kolmogorov turbulence is usually used to model the interstellar turbulence, but the scattering measurements of Galactic pulsars suggest a significant deviation from the Kolmogorov turbulence. In fact, observations reveal that both Kolmogorov turbulence in the diffuse warm medium and supersonic turbulence in cold molecular clouds are important for explaining the dependence of the scatter broadening time on the dispersion measure of pulsars.



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