Observational Evidence of How Magnetofluid Turbulence in the Solar Wind Dissipates

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The solar wind appears to be a fully developed turbulent magnetofluid. As this magnetofluid expands into the heliosphere, it cools significantly less rapidly than would be expected of an adiabatically expanding gas. The evolution of the temperature with distance is roughly what would be expected if the turbulence dissipated by heating the thermal plasma. Several physical mechanisms have been proposed, including resonance absorption of waves and Landau damping. Recently, high-time resolution magnetic field data from the four Cluster spacecraft have illustrated damping of the fluctuations out to the electron inertial scale. Use of the *wave telescope/k-filtering* technique during two intervals of busrt mode data suggests that dissipation of the fluctuations is due to Landau damping, first on protons, then on electrons.