



Evidence for Electron Landau Damping in Solar Wind Turbulence

Christopher Chen (1), Kris Klein (2), and Greg Howes (3)

(1) School of Physics and Astronomy, Queen Mary University of London, London, United Kingdom (christopher.chen@qmul.ac.uk), (2) Lunar and Planetary Laboratory, University of Arizona, Tucson, USA (kris.klein@gmail.com), (3) Department of Physics and Astronomy, University of Iowa, Iowa City, USA (gregory-howes@uiowa.edu)

One of the major unanswered questions in heliophysics is how energy is dissipated at the small scale end of the turbulent cascade to heat the plasma. To help address this, we apply a field-particle correlation technique to MMS data to measure the energy transfer from the turbulence to the particles. The technique separates the oscillatory and secular components and allows the secular energy transfer to be measured in velocity space. Here, we present results of the parallel transfer to electrons, which shows signatures consistent with Landau damping. This suggests electron Landau damping may play a significant role in turbulent dissipation and that the technique is a useful tool to understand the processes involved in turbulent dissipation.