Geophysical Research Abstracts, Vol. 7, 05030, 2005 SRef-ID: 1607-7962/gra/EGU05-A-05030 © European Geosciences Union 2005



The role of compressibility in solar wind plasma turbulence.

B. Hnat, S. C. Chapman, G. Rowlands

Space and Astrophysics Group, University of Warwick, Coventry CV4 7AL, UK

Incompressible Magnetohydrodynamics (MHD) is often assumed to describe solar wind turbulence. We use extended self similarity to reveal scaling in structure functions of density fluctuations in the solar wind. Obtained scaling is then compared with that found in the inertial range of quantities identified as passive scalars in other turbulent systems. We find that these are not coincident. This implies that either solar wind turbulence is compressible, or that straightforward comparison of structure functions does not adequately capture its inertial range properties.