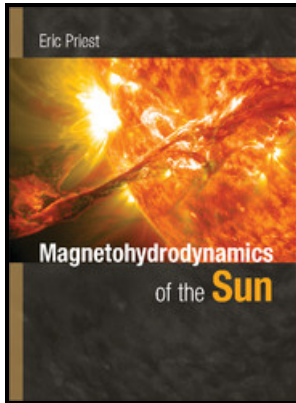


MHD structures, waves and turbulence in the solar wind - observations and theories

Kluwer Academic Publishers - MHD turbulence in the solar wind



Description: -

-

Garlic

Cookery (Garlic)

Cooking / Wine

Specific Ingredients - Herbs, Spices, Condiments

Heliosphere

Solar wind MHD structures, waves and turbulence in the solar wind - observations and theories

-MHD structures, waves and turbulence in the solar wind - observations and theories

Notes: Includes bibliographical references (p. 201-210).

This edition was published in 1995



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Tags: #Waves #Côte #d'Azur/meetings/Nonlinear #waves #and #turbulence #in #space #plasmas/Nonlinear #waves #and #turbulence #in #space #plasmas #contributions

MHD turbulence in the solar wind

After a brief presentation of this approach, we first apply it to turbulent data obtained via a three dimensional direct numerical simulation of the forced, incompressible MHD equations from the John Hopkins turbulent database. I will review this progress, spell out caveats of course there are caveats, and describe the next steps, including some theoretical progress on the high-beta regime. Emphasis is placed on the progress made in the past decade in the understanding of the nature and origin of especially small-scale, compressible and incompressible fluctuations.

Effect of current sheets on the power spectrum of the solar wind magnetic field using a cell model

The results of this are consistent with the presence of electron Landau damping in the kinetic range.

MHD Structures, Waves and Turbulence in the Solar Wind (豆瓣)

Finally, open questions concerning the origin, nature and evolution of the fluctuations are listed, and perspectives for future research are outlined. This is the first book to give a comprehensive overview of recent observational and theoretical results on solar wind structures and fluctuations and magnetohydrodynamic waves and turbulence, preference being given to phenomena in the inner heliosphere. Also, this description brings two new spatial scales into play, such as the ion and electron inertial lengths.

MHD turbulence in the solar wind

Finally, wave models for heating the solar corona often appeal to absorption of MHD turbulence. MHD turbulence is important for a number of reasons in space and solar physics. The resulting numerical method is robust and retains a number of important properties of the continuous system, such as conservation of mass and energy, yet the method is computationally efficient and performs well at scale on cutting edge high performance computational resources.

MHD structures, waves and turbulence in the solar wind: Observations and theories

Significant progress has been made in recent years on deriving various forms of exact laws for different compressible flows: HydroDynamics HD , MagnetoHydroDynamics MHD and Hall-MagnetoHydroDynamics HMHD. It is linked to our basic understanding of the compressibility of solar wind turbulence. Turbulence models describing the spatial transport and spectral transfer of the fluctuations in the inner heliosphere are discussed.

Waves Côte d'Azur/meetings/Nonlinear waves and turbulence in space plasmas/Nonlinear waves and turbulence in space plasmas contributions

Additional information This article is based on the recently published paper: Sasikumar Raja, K. Tags: Etienne Behar, Fouad Sahraoui Laboratoire de Physique des Plasmas, CNRS - École polytechnique - Sorbonne Université - Observatoire de Paris, Université Paris-Sud, Université Paris-Saclay, F-91128 Palaiseau, France We present our current work on the analysis of MMS data carried out in particular with particle velocity distribution functions VDF.

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