Japan Geoscience Union Meeting 2013
(May 19-24 2013 at Makuhari, Chiba, Japan)

PEM27-08 会場:301A 時間:5 月 24 日 11:00-11:15

不均衡なアルヴェン乱流の非線形減衰
Nonlinear dissipation of the imbalanced Alfvenic turbulence

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Nonlinear evolution of Alfvenic turbulence is a fundamental process in the solar wind magnetihydrodynamic (MHD) turbulence. The past observational studies suggested that the MHD turbulence close to the sun is the ”slab” fluctuation, where the wave number vector is parallel to the ambient magnetic field, while the ”2D” fluctuation, where the wave number vector is perpendicular to the ambient magnetic field, becomes dominant with increasing heliocentric distance. However, the energy transfer process from the ”slab” fluctuation to the ”2D” fluctuation is still unclear. In the present study, we numerically discuss the nonlinear evolution of the ”imbalanced (high cross helicity)” Alfvenic turbulence by using a two-dimensional ion hybrid code. The dissipation processes related to the ion kinetics are demonstrated.

キーワード: 太陽風, 磁気流体乱流
Keywords: solar wind, MHD turbulence