

# **The importance of Alfvénic turbulence in reconnection: Cluster observations**

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We demonstrate the efficiency of magnetic energy transfer across a reconnecting magnetopause to a turbulent spectrum of kinetic Alfvén waves. Using interferometric techniques applied to multi-point Cluster observations we characterize the spectra of electromagnetic field fluctuations in reconnection jets and demonstrate that these waves are consistent with a turbulent spectrum of kinetic Alfvén waves. It is shown that as much as 50% of the incoming magnetosheath magnetic field energy flux to the reconnection site is converted into Alfvénic turbulence. Furthermore, using the multi-point observations it is shown that these waves can provide plasma transport across the magnetopause at the Bohm rate and is sufficient to account for the thickness of the boundary layer.