



Magnetic reconnection: science questions motivating the necessity of Cross-Scale mission

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Current multi-spacecraft missions, such as Cluster and upcoming MMS, study the reconnection process at different spatial scales covering electron, ion and fluid scales. However, they can cover only one particular scale at a time where the scale depends on the spacecraft separation. The Cross-Scale mission would allow covering all these scales simultaneously. Magnetic reconnection is intrinsically multi-scale process where the understanding of coupling among all the different scales is crucial for a further major advancement in the field. We summarize the major questions that have been identified in the Cross-Scale Science Priority Document and which would be possible to resolve using data from Cross-Scale type of mission. We present several illustrative examples of the magnetic reconnection studies by Cluster spacecraft which show the success and limitations of four-spacecraft observations.