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The Magnetospheric Multiscale (MMS) Mission development and initial results (Hannes Alfvén Medal Lecture)

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The MMS mission is a 4 spacecraft NASA mission designed to unlock the mysteries of magnetic reconnection. The spacecraft measure the ion and electron distributions and the electric and magnetic fields inside the electron and ion diffusion regions in the Earth's magnetosphere. In many ways, this mission is a natural follow-on to the highly successful European Space Agency Cluster mission. This talk focuses on the development of the MMS mission concept with emphasis on the connections to the Cluster mission. Preliminary results from the first phase of the MMS mission will be presented.