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Title: A plasma instability named magnetic reconnection

Abstract.

We can look at magnetic reconnection from different angles which stress different features: we can look at reconnection mainly as a process whereby magnetic energy inside highly inhomogeneous regions is converted into plasma particle energy or as a process whereby the magnetic topology, more precisely the connections of the magnetic field lines, is altered; we can look at reconnection mainly as a process forced by large scale plasma motions with time scales essentially determined by these motions, but made possible by the presence of non ideal effects, or as plasma instability where the non ideal effects play a fundamental role, at least within linear theory, in determining the reconnection rate. In these two lectures some basic and well established results will be presented focusing on this latter point of view, taking into consideration different magnetic field configurations and plasma regimes