

Evolution of the Reconnecting Internal Kink Mode

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The best agreement between theory and experiments concerning the onset of magnetic reconnection is (probably) represented by the theory of the resistive internal kink mode [1]. Now there remains a need to explain the following observed evolution of the reconnection rate that involves the formation of a relatively large magnetic island and a local steepening of the electron temperature gradient. Thus, the effects that characterize a magneto-thermal reconnecting mode [2] are proposed to be compounded with those (e.g. total plasma pressure gradient) that lead to the excitation of the original ($m^0 = 1$) mode. *Supported in part by the U.S. DOE.

[1] B. Coppi, *et al.*, *Nucl. Fusion*, **55**, 053011 (2015).

[2] B. Coppi, B. Basu, and A. Fletcher, *Nucl. Fusion*, **57**, 7 (2017).