



Einladung zum Physikalischen Kolloquium

Montag, 05.07.2010,
16.15 Uhr im H2 (025)



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Magnetic Reconnection in Nuclear Fusion Reactors

In magnetic fusion reactors, deuterium and tritium nuclei at high temperatures (over 100 Millions K) are confined by means of conveniently shaped magnetic fields. The desired magnetic configuration, however, is prone to instabilities which can limit the performance of the machine. In particular, the tearing instability appears in the form of magnetic islands, which develop at particular radial positions where magnetic reconnection occurs, and reduce the energy stored in the burning plasma. After a review of the basic physical processes leading to magnetic reconnection in the presence of a strong magnetic field, the peculiarities of the problem in toroidal confinement devices are discussed and recent advances towards the control of these instabilities are presented.

