

Control of Turbulent Transport and Dynamics of Transport Barriers in Edge Tokamak Plasmas

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Control of turbulent transport in edge tokamak plasmas is an important issue for the realization of fusion reactors. The most promising operational regime of future reactors is characterized by the existence of a transport barrier at the plasma edge. This barrier is not stable but relaxes quasiperiodically. It is thus important to investigate the physical mechanisms underlying the dynamics of such barriers in order to use them as control tools of the turbulent transport in fusion machines. We will review in this paper different aspects of such dynamics and show their implications on turbulent transport.