Detached Scrape-off Layer Tokamak Plasmas

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ABSTRACT

The equilibrium and stability of scrape-off layer plasmas are considered using a 1-dimensional treatment of coupled heat conduction and pressure balance equations. It is found that, for sufficiently low temperature and high neutral density, a region of greatly reduced power flux to the end plate can be achieved. The plasma in the vicinity of the end wall is characterized by a sharp plasma pressure gradient and a relatively low temperature, $1 < T_0 < 10$ eV.

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