

Abstract Submitted
for the DPP12 Meeting of
The American Physical Society

Tokamak disruption runaway electron beam energy deposition

YIAN LEI, Beijing University — Disruption is one of the major concerns in magnetic confinement fusion (MCF) research. People believe the energetic runaway electron beam can damage the first wall by depositing most of its energy to certain region as heat, melting the wall. However, as the energy of the beam electron is very high (up to 50 MeV), most of the beam energy should be converted as gamma radiation and escape, and the fraction of thermal energy deposition is relatively small. We will calculate the runaway electron energy deposition in typical first wall configurations in ITER disruption scenario, and give the temperature profile of the wall. We will also calculate the bremsstrahlung gamma ray spectra of the beam and discuss the consequences.

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Date submitted: 13 Jul 2012

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