

Abstract Submitted
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Influence of the internal magnetic fluctuation and the dynamic ergodic divertor on the transport of runaways in the TEXTOR tokamak¹ OSWALD WILLI, TIMUR KUDYAKOV, HHU, KARL HEINZ FINKEN, SADRILLA ABDULLAEV, MICHAEL LEHNEN, FZJ, SERGEY BOZHENKOV, MARCIN JAKUBOWSKI, MPI, YUHONG XU, LPP — Influence of the internal magnetic fluctuations and resonant magnetic perturbation on the transport of runaway electrons has been studied during the low density discharges at the TEXTOR tokamak. The diffusion coefficient was derived as a function of B_t by means of synchrotron radiation measurements. Applying the model which includes the transport reducing effect of the electron orbit shift the magnetic fluctuation level was estimated from the measured diffusion coefficient. It was found that an increase of runaway losses with the decreasing toroidal magnetic field is accompanied with a growth of the magnetic fluctuations in the plasma. The energy resolved measurements confirm that runaway loss occurs predominantly for low energy runaways (few MeV) and considerably less for high energy ones. Externally applied magnetic perturbations show the same behaviour: confinement of highly relativistic electrons is less affected by the magnetic perturbations as compared to low energetic ones.

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