TRANSPORT BARRIERS IN REGIMES WITH DEUTERIUM PELLETS INJECTED INTO T-10 PLASMA UNDER ECRH.

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The confinement of energy and particles has been observed to improve in T-10 discharges when deuterium pellets are injected into plasma heated at the second harmonic of ECR. The H_H factor used in the ITER scaling is equal to 1--1.3 in these regimes. Successive injections of deuterium pellets lead to corresponding increase both in the plasma energy and in the energy-confinement time during ECRH. Moreover, the confinement time practically linearly depends on averaged plasma density that increases after each pellet injection.

In these regimes, the profile of plasma density was observed to change abruptly. Namely: (i) a density pedestal, typical of an external transport barrier in the H-mode, is formed at the periphery of the plasma column; (ii) the power of auxiliary heating needed for transition to the H-mode is several times less than that predicted by the ITER scaling; (iii) regions of steep density gradients, typical of internal transport barriers, are formed in the inner area of the plasma column. A change in the plasma-temperature profile is also observed in the same regions. In addition, these regions are located near rational surfaces with low values of *m* and *n* indexes.

All of these phenomena were observed just in case of pellets injected into ECR heated plasma.