Improved High-Mode with Neon Injection in the DIII–D Tokamak

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The first observation of a high confinement mode with reduced energy transport in both the center and the edge induced by the injection of neon impurities is reported in this paper. This improved high mode (IH–mode) develops from an improved low confinement mode (IL–mode). The first direct measurements of the neon 10^+ density profile in a plasma with enhanced energy confinement due to neon injection will also be reported. Both E×B shear and a direct impurity effect are shown to be important in the transport reduction.