

# Impurity-Induced Suppression of Core Turbulence and Transport in the DIII-D Tokamak

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## *Abstract*

Turbulence is significantly reduced in a tokamak plasma as a result of neon-seeding of an L-mode discharge. Correspondingly, confinement is improved and cross-field transport reduced. Fully saturated turbulence in the range  $0.1 \leq k_{\perp} \rho_s \leq 0.6$  is measured at  $\rho=0.7$  and exhibits an order of magnitude reduction in total power after neon injection, with almost complete suppression for  $k_{\perp} \rho_s > 0.3$ . This is consistent with a reduction in the calculated linear growth rate for  $k_{\perp} \rho_s > 0.5$  and an increase in the measured  $\omega_{E \times B}$  shearing rate.

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