Discharges in the DIII-D Tokamak

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the promise of enhanced fusion performance in advanced tokamak shear, provides stability to short wavelength modes over a sport barrier with strong pressure peaking. However, stability the improved confinement which results. Modification of the

ng of the stability limits in NCS discharges, has led to record calculations for NCS plasmas show that the beta limit depends

Resistive calculations for NCS plasmas in DIII-D reveal a stable tearing mode, with beta limits below the ideal limit. The

in the negative shear region, and its stability limit depends discharge shaping. Rotational shear can raise the stability limit range mode. Discharges with strongly peaked pressure profiles stability limit but near the resistive limit. Core localized bursts of the resistive interchange mode. However, the global nature of precursor all suggest that the disruption arises from coupling real modes. On the other hand, discharges where the pressure

$\beta_n > 4$, consistent with both ideal and resistive calculations.

alyzed kink modes, driven by the edge pressure gradient and $\alpha$ in DIII-D has been achieved in discharges with a relatively $\alpha$ which contribute to stability of the resistive interchange limits with broad pressure profiles persist in low triangularity, D-T fusion experiments in JET and ITER.

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