The Weak Effect of Static, Externally Imposed, Helical Fields on Fusion Product Confinement in the DIII-D Tokamak

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ABSTRACT. Stationary helical fields with toroidal mode numbers $n = 1$ and $n = 3$ are applied to beam-heated DIII-D plasmas. Measurements of the 14 MeV neutron emission monitor the confinement of the 1 MeV tritium fusion product. To within ∼15% uncertainties, static magnetic fields with vacuum amplitudes of $\delta B/B \sim O(10^{-3})$ have no impact on the fusion product confinement.

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