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A New Operation Regime for High-Density Plasma in Heliotron J

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With careful control of a short pulse high-intensity gas fueling (HIGP) scenario in a novel magnetic configuration with a lower toroidicity in Heliotron J, high-density ($n_e \sim 10^{20} \text{ m}^{-3}$) NBI plasma is realized with an improved confinement mode in the edge. A condition of low neutral density attained by the fueling cut-off after HIGP and suppression of the edge turbulence opens a new high-density operation window in Heliotron J.

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