

Abstract Submitted
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Demonstration of ITER Operational Scenarios on DIII-D¹ E.J. DOYLE, University of California-Los Angeles, DIII-D ITER DEMONSTRATION TASK FORCE TEAM — The DIII-D program has recently begun an effort to provide experimental evaluation of the primary ITER operational scenarios, enabling direct cross-comparisons on a single tokamak. This work incorporates leading features of the ITER scenarios and anticipated operating characteristics. The plasma shape, aspect ratio and value of I/aB of the DIII-D discharges match the ITER design, with size reduced by a factor of 3.7. Key aspects of the ITER baseline ELMy H-mode (15 MA in ITER), advanced inductive (13 MA), hybrid (11 MA), and steady-state (9 MA) scenario plasmas have been replicated, providing a unified basis for transport and stability modeling and performance extrapolation. In all scenarios performance equals or closely approaches that required to realize the physics and technology goals of ITER. Baseline plasmas with normalized beta of 1.8-2.0 were studied (limited by tearing modes); for the other scenarios, the normalized beta was in the range 2.7-3.0. Confinement with $H_{98y2} \geq 1$ was seen in all cases.

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E.J. Doyle
University of California-Los Angeles

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