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**Development of Methods to Control Internal Transport Barriers in DIII-D Plasmas**<sup>1</sup> P. GOHIL, General Atomics, E.J. DOYLE, G.M. STAEBLER, L.R. BAYLOR, K.H. BURRELL, C.M. GREENFIELD, GA, T.C. JERNIGAN, M. MURAKAMI, ORNL, G.R. MCKEE, U. Wisconsin, DIII-D National Fusion Facility — A very important aspect of improving the performance and duration of plasmas with internal transport barriers (ITBs) is to develop the means of controlling the ITBs. Experiments have been performed in DIII-D to investigate the use of ECH, pellet injection and impurity injection in controlling ITBs in plasmas with L-mode edges or QH-mode edges (QDB plasmas). On-axis and off-axis localized ECH was applied (with up to 2 MW of total ECH power) inside or outside the ITB location to change the ITB position. ECH was applied to  $\rho = 0.1, 0.36, 0.57,$  and  $0.7$ . This resulted in a substantial reduction in toroidal rotation and increased density. Pellet injection into the plasma edge and at tangency to  $\rho \approx 0.7$  was investigated. Impurity injection (neon, argon, and krypton) into QDB plasmas was investigated as a method of improving the performance of these plasmas with neon being the best of the 3 gases.

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