

Abstract Submitted  
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**Long Pulse Discharges with Regions of Reduced Core Transport**<sup>1</sup> K.H. BURRELL, E.J. SYNAKOWSKI, E.J. DOYLE, R.J. FONCK, P. GOHIL, C.M. GREENFIELD, G.R. MCKEE, P.A. POLITZER, C.L. RETTIG, B.W. RICE, T.L. RHODES, B.W. STALLARD, DIII-D National Tokamak Program — Plasmas with regions of reduced core transport are a key component of the Advanced Tokamak approach to a more attractive fusion reactor.<sup>2</sup> Such plasmas have been produced in most of the world's tokamaks using transient techniques. Although steady-state techniques are being developed, a near-term demonstration that reduced transport can be achieved for long pulses is important to provide credibility for the advanced tokamak approach. We demonstrated this in shots with both L-mode and H-mode edges. The discharges with reduced core transport have durations of  $> 20 \tau_E$  and, in ELMing H-mode, normalized performance parameters of  $\beta_N H_{89P} \geq 6$  for this period. The duration of the reduced core transport phase appears to be limited only by the external hardware constraints.

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<sup>2</sup>T.S. Taylor, Plasma Phys. Contr. Fusion **39**, B47 (1997).

☒ Prefer Oral Session  
☐ Prefer Poster Session

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Special instructions: DIII-D Oral Session I, immediately following Rice
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