Abstract Submitted
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Global energy confinement studies on the Pegasus Toroidal Experiment[1] D.J. BATTAGLIA, M.J. FROST, G.D. GARSTKA, A.C. SONTAG, E.A. UNTERBERG, G.R. WINZ, University of Wisconsin-Madison — Recent studies have shown that low-recycling walls significantly enhance L-mode energy confinement [1]. Discharges on Pegasus suggest a low-recycling regime is obtained using titanium gettering and cryogenic pumping. When the external gas supply is terminated during an established discharge, tangential H_α and visible light signals drop to 5% of their initial levels within 5 ms. Wall recycling is measured using the density decay rate, and its effect on particle and energy confinement on Pegasus is explored. Initial global energy confinement times of $\tau_E = 2 - 4$ ms were calculated for $I_P \sim 0.15$ MA L-mode discharges. Scans of plasma current and line-averaged density are used to benchmark τ_E measurements against empirical L-mode scaling laws. These initial τ_E measurements indicate the H-mode power threshold as given by the ITPA04 scaling [2] can be exceeded in diverted Ohmic discharges on Pegasus.
[1] Majeski, R. *et al.* Phy. Rev. Lett. **97** 2006 075002
[2] Takizuka, T. *et al.* Plasma Phys. Control. Fusion **46** 2004 A227

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