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Plasma Studies at High Normalized Current in the PEGASUS Experiment[1] R.J. FONCK, D.J. BATTAGLIA, S.P. BURKE, N.W. EIDIETIS, G.D. GARSTKA, M.P. KOZAR, E.A. UNTERBERG, University of Wisconsin-Madison — Operations on the PEGASUS Toroidal Experiment are focusing on the exploration of MHD stability limits at high normalized current, high β_t, and near-unity aspect ratio. Past plasma behavior was dominated by large resistive MHD modes and power supply limits. Recent upgrades will allow access to the $I_p/I_{tf} > 1$ regime by suppressing the resistive MHD. Tools to vary the q-profile and suppress the MHD activity include significantly increased poloidal field control, increased, time-variable toroidal field, and loop voltage programmability. Modeling with the DCON code has demonstrated that stable equilibria exist with I_p/I_{tf} approaching 3. A complete set of magnetics diagnostics, combined with simple plasma parameter measurements and eventually an imaging SXR camera system for poloidal flux surface mapping, provides data for reasonably accurate equilibrium reconstructions. The present experimental campaign is focused on the suppression of the internal tearing modes to allow access to the external kink limits at high I_N.

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[X] Prefer Oral Session
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\Title{Plasma Studies at High Normalized Current in the {\sc Pegasus} Experiment}
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\begin{abstract}
Operations on the {\sc Pegasus} Toroidal Experiment are
focusing on the exploration of MHD stability limits at high
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