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Stability Studies at High Field Utilization in the PEGASUS Toroidal Experiment[1] E.A. UNTERBERG, D.J. BATTAGLIA, S.P. BURKE, N.W. EIDIETIS, R.J. FONCK, G.D. GARSTKA, M.P. KOZAR, University of Wisconsin-Madison — The PEGASUS Toroidal Experiment is exploring current and pressure limits in the high β_t, low-q operating space at near-unity aspect ratio. The first limit of interest is the external kink boundary that will define the accessible low-q, high I_N space. Initial operations were characterized by high β_t at very low toroidal field ($B_t \leq 0.07$ T) but were limited both by 2/1 tearing modes in the resistive, low-shear interior and by power supply waveform control capability. The experiment has been modified to avoid these limits with increased, time-variable TF, increased V-s, and improved position and shape control. The modifications allow for greater flexibility in $q(r,t)$ tailoring and should provide access to the external kink boundary. Equilibrium and stability (DCON) modeling projects stable equilibria approaching $I_p/I_{tf} \sim 3$ ($I_N \sim 20$). The initial campaign with the upgraded facility is focused on first suppressing the internal MHD activity and then challenging kink limits by achieving the modeled parameters.

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☐ Prefer Oral Session
☒ Prefer Poster Session

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Special instructions: Please place as number 1 out of 7 Pegasus posters, before Kozar et al.

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\Title{Stability Studies at High Field Utilization in the {\sc Pegasus} Toroidal Experiment}
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