

Abstract Submitted
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The Phase II Campaign for the Pegasus Toroidal Experiment¹ B. SQUIRES, E. UNTERBERG, D. BATTAGLIA, M. BONGARD, S. BURKE, N. EIDIETIS, R. FONCK, G. GARSTKA, B. KUJAK-FORD, B. LEWICKI, G. WINZ, University of Wisconsin-Madison — The Pegasus upgrade has been completed with the installation of a new 130 MV-A IGCT switched OH power system to provide a programmable $V_{loop}(t)$ with sub-ms response time. New diagnostics include a multichannel bolometer array, an imaging visible bremsstrahlung array, an X-ray pulse height analyzer, and an improved 1mm interferometer. Initial operation has demonstrated active control of all coil currents and hence more control over plasma formation. The present campaign is using these new capabilities to develop scenarios to access the high I_p/I_{TF} , high I_N , high β_t regime of interest. The Phase I performance of $I_p \sim 0.15$ MA has been recovered with $< 1/2$ the V-s used previously. $V_{loop}(t)$ programming has demonstrated increasing control of the plasma formation and mitigation of tearing modes which had constrained the operational space. An array of plasma gun current injectors is planned as a DC-helicity source to extend the effective use of V-s from the OH solenoid and test a new plasma formation scheme.

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