Abstract Submitted
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A Pulse-Burst Laser System for Thomson Scattering[1] D.J. DEN HARTOG, Department of Physics, University of Wisconsin–Madsion, and Center for Magnetic Self-Organization in Laboratory and Astrophysical Plasmas, M.T. BORCHARDT, Y.M. YANG, Department of Physics, University of Wisconsin–Madison, J.R. AMBUEL, D.J. HOLLY, H.E. MATTISON, P.E. ROBL, Physical Sciences Laboratory, University of Wisconsin–Madison — A "pulse-burst" laser system is being constructed for addition to the Thomson scattering diagnostic on the MST reversed-field pinch. This laser will produce a burst of up to 200 approximately 1 J Q-switched pulses at repetition rates 5–250 kHz. The laser will operate at 1064 nm and is a master oscillator, power amplifier (MOPA) system. Variable pulse-width drive (0.1–20 ms) of the flashlamps is accomplished by IGBT switching of large electrolytic capacitor banks. In the near term, these flashlamp power supplies will be adapted to drive the flashlamps in the two existing commercial Nd:YAG lasers used for Thomson scattering on the MST RFP. This will enable these lasers to produce a burst of up to 40 pulses at repetition frequencies $\leq$ 1 kHz. The burst train of laser pulses will enable the study of T_e and n_e dynamics in a single MST shot.

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