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A Fast Rise Time Air Insulated Linear Transformer Driver for High Energy Density Physics

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A fast rise time air insulated Linear Transformer Driver (LTD) has been constructed by a collaboration between the University of New Mexico and the Naval Research Laboratory to drive high energy density physics experiments. The LTD is comprised of 12 bricks, each consisting of two 100 kV capacitors tied to a multi-electrode low inductance switch. Details of the construction, including charging and triggering schemes will be presented. The results of circuit and electrostatic simulations of the device will be shown as well as the results of experiments using a dummy load. The load will have resistances of 0.1 to 10 ohms and results will be shown using varying charging voltages. Preliminary results from UNM dense plasma focus load will be given as well.

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