

NONLINEAR TRANSMISSION LINES WITH SATURABLE FERRITE INDUCTORS*

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Nonlinear transmission lines have been demonstrated to be an effective technique for generating high power ultrawideband or mesoband radiation without the need for a vacuum system, electron beam, or magnet. Experiments have been performed at UM on a discrete element nonlinear transmission line that uses ferrite inductors as the nonlinear element. A 100 MW driver is used to drive the experiment. Pulse sharpening of multi-kA input pulses has been observed in addition to the generation of RF. Results from these experiments and plans for GW power level nonlinear transmission line experiments will be presented.

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