

Abstract Submitted
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Slow Wave Structure as a Radiator for Nonlinear Transmission Lines¹ Y.Y. LAU, PENG ZHANG, DAVID SIMON, University of Michigan - Ann Arbor, BRAD HOFF, DAVID FRENCH, AFRL, Kirtland AFB, NM, JOHN LUG-INSLAND, AFOSR, Arlington, VA — Motivated by the potential in the generation of electromagnetic waves using the output pulses of a nonlinear transmission line (NLTL), we constructed the Green's function on a slow wave structure. A NLTL-based radiation source will not require an electron beam, and the key question is the conversion of the NLTL output of a general temporal pulse shape into radiation. A slow wave structure may be used as a radiator for the NLTL-generated pulses. We compare the analytic solution of the frequency response on the slow wave structure with that obtained from a particle-in-cell code. Favorable comparison is obtained for the first few lower order modes that are resonantly excited.

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