

Abstract Submitted  
for the DPP09 Meeting of  
The American Physical Society

**Study of a Simple Gyrotron System** MEIXUAN SHI, HAROLD WEITZNER, New York University — This study surveys a typical coupled equations of the gyrotron system. A hypothetic non-constant media is proposed in order to study different parameter regions of the system. Instead of linearizing the equations, an asymptotic analysis is performed directly onto the Maxwell equation to get the asymptotic waveforms. Results of the linearized equations are recovered at faraway from the transition regions. In two transition regions, one for cut-off, one for resonance, connections forms are obtained. Conditions of getting high amplitude outgoing waves are achieved by substituting the asymptotic waveform back to the momentum distribution equation.

Meixuan Shi  
New York University

Date submitted: 14 Jul 2009

Electronic form version 1.4