Abstracts

Theory and Numerical Simulation of a TE/sub 111/ Gyroresonant Accelerator

W.H. Miner, Jr., P. Vitello and A.T. Drobot. "Theory and Numerical Simulation of a TE/sub 111/ Gyroresonant Accelerator." 1984 Transactions on Microwave Theory and Techniques 32.10 (Oct. 1984 [T-MTT]): 1293-1301.

The production of spiral relativistic electron beams in a TE/sub 111/ gyroresonant accelerator cavity for injection into a compact high-harmonic gyrotron is studied. Parametric studies are performed to determine the effects of variations in the background magnetic field amplitude, the RF amplitude in the cavity, and the initial beam voltage on the output beam.The effects of velocity spread and a finite radial extent of the input beam are also discussed. Power curves for obtaining optimum operating regimes for the TE/sub111/ accelerator are provided.

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