

Abstracts

Investigation of the Saturation Properties of Gyroamplifiers

*D. Golomb, Y. Goren, A. Ron and J.L. Hirshfield. "Investigation of the Saturation Properties of Gyroamplifiers." 1988 *Transactions on Microwave Theory and Techniques* 36.6 (Jun. 1988 [T-MTT]): 934-938.*

The saturation properties of a TE/sub 0n/ gyroamplifier are investigated using a particle in cell numerical code. The effect of beam velocity spread is analyzed. It is found that for velocity spread \leq 5 percent the reduction in efficiency can be compensated by extending the interaction length. A numerical optimization of efficiency enhancement rising a tapered magnetic field is demonstrated. A change in the saturation mechanism from phase trapping to thermalization using the suggested tapering is observed.

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