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Title

Nonlinear simulation of a coaxial gyro-amplifier with external electrostatic voltage

Source

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Abstract

A proposal is presented to enhance the saturation output power of a small-orbit coaxial gyro-amplifier by employing an external electrostatic voltage. Nonlinear simulations show that improved saturation output power increases 19 % for a transverse electric mode at a frequency of 0.14 THz. Both the ratio of the electron-beam transverse velocity to the axial velocity and the spread of transverse velocity do not cause obvious influence on the saturation power. Therefore the performance of gyro-amplifier is effectively improved.