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Title:A novel method for calculation of eigenmodes of gyrotron resonators

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Abstract:A new method for calculating the eigenmodes of gyrotron resonators is presented. With this method, the resonant frequency, Q-factor and field profiles of the eigenmodes are determined through finding the minimum value of a function of two variables, namely the resonant frequency and the Q-factor. Compared with the traditional calculation method, the new method predicts a significantly higher Q-factor of the eigenmodes. © 2011 Springer Science+Business Media, LLC.

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