



國立成功大學 太空與電漿科學研究所
Institute of Space and Plasma Sciences, NCKU

The Impossible is Possible: Using TM Modes for the Electron Cyclotron Maser

張存續 教授
清華大學物理系

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Abstract

First, I will provide a brief overview about what we are doing at National Tsing Hua University (NTHU). Our research main themes include: (a) Frequency-tunable, high-power terahertz gyrotrons; (b) Microwave/material interaction and characterization, (c) Microwave physics and applications. Then, I will focus on the physics of the TM-mode gyrotrons. TM (transverse magnetic) modes have long been considered as the unsuitable modes for the electron cyclotron maser (ECM). This study, however, reveals that certain TM modes might be suitable for gyrotrons—ECM based devices. The findings are encouraging and imply that TM modes might be advantageous to the gyrotron backward-wave oscillators.

歡迎大家踴躍參加!