

Abstract Submitted
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Dispersion characteristics of space-charge waves on elliptic electron beams¹ KATHLEEN GEYER, ANDREW BRAINERD, CHIPING CHEN, Massachusetts Institute of Technology — A small-signal theory of space-charge waves on a relativistic elliptic electron beam has been developed recently [A. E. Brainerd, C. Chen and J. Zhou, *J. Appl. Phys.*, in press (2009)]. This paper discusses results of a comprehensive parametric study of dispersion characteristics of space-charge waves on such beams over a wide range of the parameter space, using the MIT Elliptic Beam Small Signal (EBSS) code. Applications of the theory in elliptic-beam klystrons are discussed. Implications of the space-charge wave theory are discussed in the research and development of elliptic- or sheet-beam klystrons.

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