

Calculations of Undulator Radiation

Lewis Kotredes

*Physics Department, Worcester Polytechnic Institute
Worcester, MA, 01609*

Abstract

A brief description of undulator radiation and its uses is followed by derivations of several forms for an equation governing the Fourier transform of the electric field from electrons in an undulator. Aspects of the derivation are discussed, and a number of graphs comparing the forms with each other and with other work are presented. A graph of radiation through a monochromator is shown to agree well with work done by scientists at the ESRF.