



PHYSICS AND ASTRONOMY COLLOQUIUM

Dr. David Griffiths
Reed College

“Hidden Momentum.”

Abstract

Electromagnetic fields carry energy, momentum, and even angular momentum. The momentum density is $\epsilon_0 (\mathbf{E} \times \mathbf{B})$, and it accounts (among other things) for the pressure of light. But even static fields can harbor momentum, and this would appear to contradict a general theorem: if the center of energy of a closed system is at rest, then its total momentum must be zero. Evidently in such cases there lurks some other momentum, not electromagnetic in nature, which cancels the field momentum. But finding this "hidden momentum" can be surprisingly subtle. I'll discuss a particularly nice example.

Wednesday, October 30, 2019

3:30 p.m.

Bob Wright Centre A104