

Abstract Submitted
for the MAR06 Meeting of
The American Physical Society

Particles and Waves in Classical Dynamics RONALD MICKENS —

Two central concepts in classical dynamics involve the notions of “particles” and “waves.” However, their definitions must take into consideration two aspects related to how they may be characterized: 1) physical properties and 2) their mathematical formulation within particular dynamic theories. An issue of particular importance is that these concepts are abstractions of physical phenomena and may not correspond to any actual physical system component. We first examine the concepts of “particles” and “waves” from the perspective of how they have been defined in textbooks, scientific dictionaries, handbooks, research monographs, etc. From these readings and their analysis, we formulate definitions based on how these concepts are represented in the general framework of classical dynamics. Our tentative conclusion is that this procedure allows particle and waves systems to be unambiguously defined.

Ronald Mickens
Clark Atlanta University

Date submitted: 25 Nov 2005

Electronic form version 1.4