Abstract Submitted
for the MAR09 Meeting of
The American Physical Society

Introducing scientific computation from high school to college: the case of Modellus[1] VÍTOR TEODORO, RUI NEVES, UIED e DCSA, Faculdade de Ciências e Tecnologia, Universidade Nova de Lisboa — The development of computational tools and methods has changed the way science is done. This change, however, is far from being accomplished on high school and college curricula, where computers are mainly used for showing text, images and animations. Most curricula do not consider the use of computational scientific tools, particularly tools where students can manipulate and build mathematical models, as an integral part of the learning experiences all students must have. In this paper, we discuss how Modellus, a freely available software tool (created in Java and available for all operating systems) can be used to support curricula where students from the age of 12 to college years can be introduced to scientific computation. We will also show how such a wide range of learners and their teachers can use Modellus to implement simple numerical methods and interactive animations based on those methods to explore advanced mathematical and physical reasoning.

[1]We thank the financial support of Unidade de Investigação Educação e Desenvolvimento (UIED) and Fundação para a Ciência e a Tecnologia (FCT), Programa Compromisso com a Ciência 2007

Rui Neves
UIED e DCSA, Faculdade de Ciências e Tecnologia, Universidade Nova de Lisboa

Date submitted: 30 Nov 2008 Electronic form version 1.4