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Computational Physics in the Undergraduate Physics Curriculum J.E. HASBUN, University of West Georgia — Recent efforts to incorporate computational physics in the undergraduate physics curriculum have made use of Matlab, IDL, Maple, Mathematica, Fortran, and C[1] as well as Java.[2] The benefits of similar efforts in our undergraduate physics curriculum are that students learn ways to go beyond what they learn in the classroom and use computational techniques to explore realistic physics applications. In so doing students become better prepared to perform undergraduate research that will be useful throughout their scientific careers.[3] Our standard computational physics course uses some of the above tools.[1] More recently, we have developed a first draft of a textbook for the junior level mechanics physics course that incorporates computational techniques. The text being developed in addition to employing the invaluable traditional analytical approach to problem solving, it incorporates computational physics to build on those problems. In particular, the course makes use of students abilities to use programming to go beyond the analytical approach and complement their understanding. Selected examples of representative lecture problems will be presented. [1] "Computation and Problem Solving in Undergraduate Physics," David M. Cook, Lawrence University (2003), http://www.lawrence.edu/dept/physics/ccli. [2] "Simulations in Physics: Applications to Physical Systems," H. Gould, J. Tobochnik, and W Christian; see also, http://www.opensourcephysics.org. [3] R. Landau, APS Bull. Vol 50, No.1, 1069 (2005)

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