MAR05-2004-002576

Abstract for an Invited Paper
for the MAR05 Meeting of
the American Physical Society

Laboratory-based nonlinear dynamics course for science and engineering students[1]

MATTHEW MOELTER, California Polytechnic State Univ - San Luis Obispo

We[2] describe the implementation of a new laboratory-based interdisciplinary undergraduate course on nonlinear dynamical systems. Geometrical methods and data visualization techniques are especially emphasized. A novel feature of the course is a required laboratory where the students analyze the behavior of a number of dynamical systems. Most of the laboratory experiments can be economically implemented using equipment available in many introductory physics microcomputer-based laboratories. Student response to the course, especially to the laboratory component, has been enthusiastic and positive.

[1]supported by NSF-DUE9554909

[2]Collaborators: N. Sungar, J. P. Sharpe and N. Fleishon (Physics); K. Morrison and J. McDill (Mathematics); R. Schoonover (Chemistry)