Simulating, analyzing, and animating dynamical systems: a guide to XPPAUT for researchers and students

Ermentrout, Bard, author

Abstrak

Instructors, students, and researchers will all benefit from this book, which demonstrates how to use software tools to simulate and study sets of equations that arise in a variety of applications. Instructors will learn how to use computer software in their differential equations and modeling classes, while students will learn how to create animations of their equations that can be displayed on the World Wide Web. Researchers will be introduced to useful tricks that will allow them to take full advantage of XPPAUT's capabilities. In addition, readers will learn several concepts from the field of dynamical systems, including chaos theory, how systems depend on parameters, and how simple physical systems can lead to complicated behavior.