NAU

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UNIVERSITY

Department of Mathematics and Statistics
Colloquium
Thursday   April 16
4:00 - 5:00 pm   LMC

Climate Change in a Differential Equations Course: Using Bifurcation Diagrams to Explore Small Changes with Big Effects

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Abstract

The environmental phenomenon of climate change is of critical importance to todays science and global communities. Differential equations can give a powerful lens onto this phenomenon and hence link the subject to environmental and social justice causes. In this talk, I provide an extended problem that uses bifurcation analysis to study climate change. Specifically, through studying hysteresis, this problem highlights how it may be the case that damage done to the environment by a small change cannot be reversed merely by undoing that small change. In addition to the problem itself, I elaborate on the mathematics, discuss implementation strategies, and provide examples of student work.

The department Honors Ceremony will follow the talk, with reception after.