

Using optimal control of parabolic PDEs to investigate population questions

Suzanne Lenhart
University of Tennessee

Abstract

We investigate optimal control in a class of parabolic partial differential equations, modeling populations with nonlinear growth. One example will address a question about resource management in a fishery model: Are no-take marine reserves a part of optimal harvest strategy designed to maximize yield? A second example is motivated by the question: Does movement toward a better resource environment benefit a population?