



PIMS / AMI Seminar

Tuesday, June 5, 2012

3:30 p.m.

CAB 365



“A nonautonomous predator-prey system arising from coagulation theory: is it of any use in biomathematics?”

Fernando Pestana da Costa
Universidade Aberta
Lisboa, Portugal

Abstract

A recent paper of Budáč et al. on the selfsimilar behaviour of solutions to a model of coagulation with maximum size led us to consider a nonautonomous Lotka-Volterra predator-prey system in which the vector field of the predator equation converges to zero as $t \rightarrow \infty$. The solutions of this system show a behaviour distinctly different from those of either autonomous or periodic analogs. A partial numerical and analytical study of these systems is initiated. An ecological interpretation of this type of systems is proposed. A generalization containing self-inhibitory terms is proposed and a conjecture about the limit points of solutions is made based on numerical experiments.

Co-authors: Joao Teixeira Pinto (IST, Lisbon) and Alfredo Cano (UNED, Madrid)

Refreshments will be served in CAB 649 at 3:00 p.m.