Speaker: M.A. Gonzalez Leon, Universidad de Salamanca, Spain.

Title: A new generalized Holling type II model for the interaction between a predator and two preys in competition

Abstract:

A three species mathematical model for a specialized predator in contact with two types of preys in competition is constructed. The interaction is described by using a new generalized functional response of Holling type II. Local and global stability are analyzed.

This kind of model is applied to the description of a real world scenario where certain species of snakes, that possess mandibular asymmetry caused by its evolution to improve the feeding on the predominant dextral snails, coexist with both dextral and sinistral snails. The

bilateral asymmetry degree constitutes the principal parameter that determines the evolution of the system.