



Speaker: Ovidiu Costin
Ohio State University

Thursday, September 29, 2011
1:00 PM
125 Hayes-Healy Hall

Title: Asymptotics of the general solutions of ODEs in \mathbb{C}

Abstract:

The talk will focus on recent developments in the asymptotic theory of ODEs. I will explain the notion of transseries solutions, their generalized Borel summability and exponential asymptotics. I will also discuss various applications, understanding formation of singularities in nonlinear systems and the behavior near singularities. I will briefly talk about similar results in PDEs.

In the end I will mention a new method that combines transseries and KAM ideas to obtain representations of solutions globally in the complex domain and finding connection formulae for integrable systems.

The work is in collaboration with R. D. Costin (from Ohio State) and M. Huang (from University of Chicago).