Abstract:

A semitoric system is a type of 4-dimensional integrable system which possesses a circular symmetry; semitoric systems are classified in terms of five invariants by a result of Pelayo-Vu Ngoc. In this talk we will introduce semitoric systems, discuss their classification, and discuss several recent results related to explicitly constructing such systems. The general strategy of such constructions is via a one-parameter family of systems, known as a semitoric family, which passes through certain degeneracies to transition into the desired system. Using these families, we find several new explicit semitoric systems which display various behavior and are of importance in the semitoric minimal models program. The work presented is joint with Y. Le Floch and S. Hohloch (and work joint with D. Kane and A. Pelayo will also be mentioned).