

1139-53-14

Joseph Palmer* (j.palmer@rutgers.edu), Hill Center - Mathematics Department, 110
Frelinghuysen Road, Piscataway, NJ 08854. *New constructions of semitoric integrable systems.*

A semitoric integrable system is a four-dimensional integrable system for which one of the integrals is assumed to have periodic Hamiltonian flow, corresponding to a circular symmetry of the system. Since their introduction by Pelayo and Vũ Ngọc semitoric integrable systems have been the subject of a large amount of research, but so far what has been missing is a broad collection of examples. In this talk we provide explicit examples of such systems and discuss techniques to construct semitoric systems in more general cases. Moreover, we examine examples of families of integrable systems depending on parameters which transition between being toric, semitoric, degenerate, and having hyperbolic singular points. Partially joint work with S. Hohloch and Y. Le Floch. (Received November 09, 2017)