

Monodromy in integrable and almost integrable Hamiltonian systems

Floris Takens

abstract:

Duistermaat (1980) initiated the investigation of torus bundles which occur in integrable Hamiltonian systems. Shortly after, Cushman provided examples of concrete systems, e.g. the spherical pendulum, where these torus bundles have monodromy and hence are non-trivial. Vu Ngoc (1999) investigated the quantummechanical consequences of non-trivial monodromy. Recently Broer, Cushman, Fasso, Rink and Takens extended Poeschel's theory to small non-integrable perturbations of systems with monodromy. In this talk I will give a survey of this work and indicate some open problems.