Bifurcation of closed orbits from equilibria of Hamiltonian systems

Anna Gołębiewska

The aim of the talk is to study the existence of branches of periodic orbits emanating from equilibria of some Hamiltonian systems. We consider mainly the planar and spatial autonomous Hamiltonian systems with Coriolis forces, taking as an example the Restricted Triangular Four-Body Problem. Using the theory of the degree for invariant strongly indefinite functionals we prove the generalization of Lyapunov's Center Theorem for such systems. Our theory provides the existence of global branches of closed orbits, in the nondegenerate as well as in some degenerate cases.

Anna Gołębiewska, Nicolaus Copernicus University in Toruń
e-mail : aniar@mat.umk.pl