On symplectic invariants
of integrable Hamiltonian systems
in the smooth category

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Action variables are natural invariants of fiberwise symplectic equivalence of integrable Hamiltonian systems. There are several examples of singularities of such systems (e.g. simple focus-focus singularities), where action variables form a complete set of symplectic invariants.

In this talk, we will show how this result can be proven for specific one-degree of freedom systems and certain unfoldings of such systems, in the smooth category. In particular, we generalise to the smooth case a result by A.V. Bolsinov, L. Guglielmi and E.A. Kudryavtseva that the so-called parabolic orbits and cusp singularities of integrable two-degree of freedom systems have action variables as a complete set of symplectic invariants.

The talk is based on a joint work with Prof. E.A. Kudryavtseva.