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# Conformally symplectic systems

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## Abstract

Conformally symplectic systems are systems which transform a symplectic form into a multiple of itself.

They appear naturally in mechanical systems with friction proportional to the velocity, thermostated systems or as Euler Lagrange equations of discounted functionals in economics. We present a KAM theory for these systems.

The results is formulated in an a-posteriori format which says than an approximate solution of an invariance equation which is not degenerate leads to a true solution. Note that the formulation does not make any reference to a quasi-integrable system. The method also leads to a very efficient algorithm that is guaranteed to converge to the maximal domain. This algorithm has been implemented.

The method also allows to study the domain of analyticity of the solutions in singular perturbation theory.

This is joint work with A. Celletti and R. Calleja

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