Periodic points for singular systems

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This poster focuses on three different dynamical systems: the N-centre problem, a one dimensional atom model and Kepler problem. The common thread is the interplay between calculus of variation and (singular) dynamical systems. In particular, on how critical point methods can be applied to establish the existence of periodic points. The foremost dynamical consequence is the presence of compact chaotic Cantor-like sets. The last part of the poster offers a somewhat opposite perspective: we investigate (integrable) deformations of the Kepler problem maintaining the property that all solutions are periodic at given energy levels.This poster focuses on three different dynamical systems: the N-centre problem, a one dimensional atom model and Kepler problem. The common thread is the interplay between calculus of variation and (singular) dynamical systems. In particular, on how critical point methods can be applied to establish the existence of periodic points. The foremost dynamical consequence is the presence of compact chaotic Cantor-like sets. The last part of the poster offers a somewhat opposite perspective: we investigate (integrable) deformations of the Kepler problem maintaining the property that all solutions are periodic at given energy levels.

References

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