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Title: *"Parabolic trajectories and symbolic dynamics: a survey on the variational approach to the N-body and N-centre problem"*

Abstract. In its full generality, the N-body problem of Celestial Mechanics has challenged many generations of mathematicians. It is commonly accepted, since the early works by H. Poincaré, that the periodic problem, through its associated action spectrum, carries precious information on the whole dynamics of a Hamiltonian system. Therefore, the problem of the existence and the qualitative properties of periodic and other selected trajectories for the N-body problem (from the classical celestial mechanics point of view to more recent advances in molecular and quantum models) has been extensively studied over the decades, and, more recently, new tools and approaches have given a significant boost to the field. We shall review some old an new results on the existence and classification of selected trajectories of the classical N-centre and N-body problem, with an emphasis on new analytical and geometrical techniques.