

On finiteness of central configurations

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Abstract

Self-similar solutions for the n -body problem, whose configurations are known as central configurations, are of special importance in celestial mechanics. Its finiteness is a long standing open problem. In this talk we will briefly outline some breakthroughs in the past two decades, in particular Hampton-Moeckel's work for the case $n=4$ (Invent. Math. 2006) and Albouy-Kaloshin's work for the case $n=5$ (Ann. Math. 2012). We will report our recent progress for the case $n=6$.