Abstract

In this report, we study the linear stability of (1 + n)-gon elliptic relative equilibrium (ERE for short), that is the Kepler homographic solution with the (1 + n)-gon central configurations. We show that for $n \ge 8$ and any eccentricity e $\in [0, 1)$, the (1 + n)-gon ERE is stable when the central mass m is large enough. Some linear instability results are given when m is small.