

## Extensions to Chen's Minimizing Equal Mass Parallelogram Solutions

**Authors :** Abdalla Manur, Daniel Offin, Alessandro Arsie

**Abstract :** In this paper, we study the extension of the minimizing equal mass parallelogram solutions which was derived by Chen in 2001. Chen's solution was minimizing for one quarter of the period  $[0; T]$ , where numerical integration had been used in his proof. This paper focuses on extending the minimization property to intervals of time  $[0; 2T]$  and  $[0; 4T]$ .

**Keywords :** action, Hamiltonian, N-body, symmetry

**Conference Title :** ICMSC 2017 : International Conference on Mathematics, Statistics and Computics

**Conference Location :** Toronto, Canada

**Conference Dates :** June 15-16, 2017