

# Symbolic dynamics in equal-mass three-body problem

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## Abstract

Methods of symbolic dynamics are used to study chaos in the free-fall equal-mass three-body problem. Two-dimensional homology map of initial configurations is scanned with steps of 0.001 along both axes. States of binary and triple encounters as well as changes of configuration types are used to construct 5 different symbolic sequences for each trajectory. Shannon and Markov entropies are used to characterize each of symbolic sequences received. Integral values of the entropies along the trajectory and maximum values of the entropies are estimated. Trajectories with similar values of these entropies (ergodic components) are revealed.