Core-halo formation in one-dimensional self-gravitating systems

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Universite d'Orleans — For many decades the one-dimensional self-gravitating sheet
system has been studied as the simplest dynamical model for astrophysical systems
of masses. The formation of core-halo structures has been of particular interest
for astrophysical systems and their evolution. In one-dimensional systems, under
the right conditions, similar structures can form in position-velocity space. In this
work we study these formations using a dynamical simulation of a one-dimensional
system of sheet masses. Specific particles identified in the initial distribution are
tracked to the final core-halo distribution, and the evolution of the distribution of
these particles in the system is identified and discussed.

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