

N-body self-consistent stars-halo modeling of the Fornax dwarf galaxy

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Dwarf spheroidal (dSph) satellites of the Milky Way (MW) are the mostly dark matter (DM) dominated systems. Their dynamical parameters such as line- of-sight velocities are measured very accurately, so they are very good probes of DM properties. We have constructed nearly self-consistent stars-halo model of the dSph Fornax galaxy using the method of Kuijken & Dubinski, 1995. This is a step forward after previous studies of this object based on more approximate Jeans equation approach. To guess the parameters which make the N-body model close to the visible object we use Hayashi et. al. 2016 stellar dynamics model of the Fornax galaxy. We took the visual and dark density profiles of the galaxy and fit the model King and Lowered Evans distribution functions so that the density profiles of them become as close to the stellar dynamics profiles as possible. We also traced the dynamical N-body evolution of this model with Dehnen's falcON technique and found it rather stable during several typical dynamical timescales.