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motions, radial velocities and the potential of the Galaxy. Aiming to improve the statistics of our catalog of open clusters, maintained by our research group, we determined the radial velocity of stars belonging to a group of open clusters using spectra with a resolution of 4000, obtained at the Pico dos Dias Observatory (LNA) with the 1.60 m telescope and the Coudé spectrograph.

We observed the open cluster's member stars and calculated their radial speeds using standard techniques. The stars were selected from our own database based on relevant information concerning the clusters, obtained by statistical analysis of their proper motions and/or their position in the HR's diagram. In this work, we present the detailed analysis of the data reduction and radial velocity determination using synthetic spectra from different libraries. Finally we present the open cluster's radial (and spacial) velocities.

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THE FORMATION OF DSPH GALAXIES

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Dwarf spheroidal (dSph) galaxies are considered the basic building blocks of the galaxy formation process in the ΛCDM (Lambda Cold Dark Matter) hierarchical cosmological model. These galaxies are believed to be the most dark matter (DM) dominated systems known, have the lowest stellar content, and are poor in gas. Many theories attempt to explain the formation of dSph galaxies resorting to the fact that these galaxies are mainly found orbiting large galaxies or invoking other mechanisms of interactions. Here we show the full set of simulation as an extension of our fiducial model, where we study the formation of classical dSph galaxies in isolation by dissolving star clusters within the DM halo of the dwarf galaxy. In our parameter survey we adopt cored and cusped DM halo profiles and consider different numbers of dissolving star clusters. We investigate the dependency of observable quantities with different masses and scale-lengths of the DM halo and different star formation efficiencies (SFE). We find that our proposed scenario explains many features of the classical dSph galaxies of the Milky Way, like their morphology and their dynamics. We see trends how the surface brightness and the scale-length of the luminous component vary with the parameters of our simulations. We also identify how irregularities in their shape, i.e. clumpiness and ellipticity vary in our simulations. In velocity space, we identify the parameters leading to flat velocity dispersions curves. We recognize kinematically cold substructures in velocity space, named fossil remnants and stemming from our unique initial conditions, which alter the expected results. These streaming motions are considered as a key feature for future observation with high resolution to validate our scenario.

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A KINEMATIC STUDY OF DIFFERENT POPULATIONS IN THE GALAXY NGC 6822

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The kinematics of planetary nebulae (PNe) and HII regions in the irregular galaxy NGC 6822 is analyzed through high resolution spectroscopy from LCO-Clay-MIKE and OAN-2.1m-MES telescopes-spectrographs. The data have a resolution better than 10 km/s. The heliocentric radial velocities of these objects are compared to the kinematics of the extended HI disk found in this galaxy. The analysis shows that HII regions and other members of the young stellar population follow closely the rotation of the HI disk. On the contrary, PNe are not moving along with the HI gas and their kinematics is closer to the behavior of the spheroid of C stars, which is a system with different spatial distribution and kinematics. Thus we confirm that NGC 6822 has at least two very different kinematical systems with different spatial distribution: the rotating HI disk where the young population resides, and the stellar spheroid containing the intermediate-old population.

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