

Dark matter in the inner parts of barred galaxies

I. Pérez

Kapteyn Astronomical Institute, University of Groningen.

I will present the results from dynamical simulations run in the potential derived from the light distribution of a sample of late-type barred spiral galaxies. The aim is to determine whether the mass distribution together with the hydrodynamical simulations can reproduce the observed kinematics and gas morphology in the inner regions of these barred galaxies where the non-circular motions can break the disk-halo degeneracy. The SPH models using the stellar mass models obtained directly from the H -band light distributions give a good representation of the gas distribution and dynamics of the modelled galaxies, supporting the maximum disk assumption. This result indicates that the gravitational field in the inner region is mostly provided by the stellar luminous component. When 40% of the total mass is transferred to an axisymmetric dark halo, the modelled kinematics clearly depart from the observed kinematics, whereas the departures are negligible for dark mass halos of 5% and 20% of the total mass. This result sets a lower limit for the contribution of the luminous component of about 80%. Fast bars give the best fit to the observed kinematics.

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