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RESUMENES/ABSTRACTS

GROUPS WITH APPARENT HIGH M/L RATIOS

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Dynamical analysis of galaxy systems, if assumed in a virialized state, show that their M/L ratios spread a range in values of order 50 for groups to about 400 for rich clusters. However, if dark matter is distributed inhomogeneously, this range could be larger in some (poorly studied) systems, presumably depending on factors at their formation epoch. Do systems with greater M/L ratios, or a higher proportion of dark matter, exists?

Spectra, taken with the multiobject spectrograph ARGUS at the CTIO 4m telescope, of 27 members of the group of faint galaxies around the dominant NGC 4782/3 pair, show a group velocity dispersion of 550 km s^{-1} within a projected 300 kpc radius (H_o = 100 km s^{-1} Mpc^{-1}). This sample extends the previous 12 velocities measured by de Souza & Quintana (1990, AJ, 99, 1065). Most of the luminosity of the group is in the dumb-bell galaxy, implying an estimated M/L $\gtrsim$ 1000 $(M/L)_\odot$. Velocity measurements with the Fiber spectrograph at Las Campanas 2.5-m telescope of 50 galaxies in the neighborhood of the 900 km s^{-1} relative velocity dumb-bell IC5049 at z = 0.04, showed that 13 galaxies form a tight group surrounding the dumb-bell, with a dispersion of 580 km s^{-1}. Here, the concentration of luminosity in the db is even greater than in the previous group, leading to a M/L $\sim$ 2000 $(M/L)_\odot$. The region sampled, $1.5^o \times 1.5^o$, shows one other galaxy concentration with an internal dispersion of 330 km s^{-1} and a slightly 600 km s^{-1} higher redshift, located 0.5^o SE of IC5049. The dynamics of both groups and surrounding concentrations was discussed assuming either bound or unbound states. In the first case the large values of M/L quoted were obtained. In the second, in which the slight bi-modality of the velocity histograms is taken as indicator of merging groups, the systems are explained as the collision of two elliptical galaxies each surrounded by smaller groups of satellites. Future observations to study the extentions of these groups and possible contamination by interlopers were also described. Numerical simulations are in progress to study their evolution from a theoretical viewpoint.

A HIERARCHICAL ALGORITHM TO DISENTANGLE NEARBY GROUPS OF GALAXIES (< 6000 km s^{-1})

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A hierarchical algorithm, similar to Tully's (1987, ApJ, 321, 280) one, has been devised and applied to an all-sky sample of 4143 galaxies comprising all the objects with apparent diameter D_{25} > 100 arcsec and of known recession velocities < 6000 km s^{-1}. This sample is at least 84% complete to these limits. The hierarchy is built on the mass density of the aggregates progressively formed by the method, corrected for the loss of faint galaxies with the distance; this correction represents the main improvement upon Tully's treatment. In the method, a group is defined as an entity having an average luminosity density higher than 8×10^9 $L_{B\odot}$ Mpc^{-3}, chosen as to ensure that it is gravitationally bound and does not follow the Hubble expansion.

264 groups of at least 3 members have been identified in this way, among which 82, having > 5 members and located at distances < 40 Mpc, represent a more complete sub-sample. Our sample represents the deepest and richest collection of groups homogeneous over both hemispheres and whose global properties do not present significant biases with the distance; it can thus be used confidently for a variety of statistical studies.

A first analysis of the sample leads to the following conclusions: *(i)* almost all the crossing times are < H_0^{-1}, confirming the bound nature of our groups; however, the collapse times are generally larger than the age of the universe, showing that the majority of these groups is far from being virialized. *(ii)* The median value of the 1-D velocity dispersion is rather low, 73 km s^{-1}, without correcting for measurement errors of individual radial velocities. *(iii)* The median virial mass to blue luminosity ratio of the groups is 62 $M_\odot$ $L_{B\odot}{}^{-1}$, a high value, but lower than some obtained in previous studies; it