ABSTRACTS

fits depend on the satellite masses. We found very good agreement between the numerical results and the theoretical predictions, so the orbital decay can be well described by Chandrasekhar’s formula, which suggests that this can be characterized as a local process. These conclusions were not altered by the use of a non-self consistent code, which indicates that the self consistency of the galaxy does not affect the orbital decay of the satellite.

To check the effect of the global response of the galaxy on the orbital decay, we run two more sets of simulations with two and four satellites, respectively, which are diametrically opposed and do not interact with each other. The self consistency of the galaxy was neglected. The different decay rates of the satellite (progressively slower for the models with more satellites) indicate that the different global responses induced in each set of models affect, but only slightly, the orbital decay of the satellite due to dynamical friction.

Other simulations, in which the galaxies have anisotropic velocity distribution given by the Osipkov-Merrit models, indicate that this does not affect the orbital decay of the satellite.

STATISTICAL PROPERTIES OF INTEGRATED SPECTRA OF GALAXIES

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We have studied the sample of 55 integrated spectra from Kennicutt’s (1992) spectrophotometric atlas of galaxies. The data was divided in two sets, one containing only normal galaxies (23 objects) and the other with all galaxies. The Karhunen-Loève Transform (KLT) was then applied to the covariance matrix of the data. We show that the first two terms of the KLT explain 95.7% of the variance of the normal galaxies set, and 83.2% of the all-galaxies set. The projection of the spectra over the plane spanned by the first two terms of the KLT shows that in both sets the normal galaxies are in a linear sequence which we call spectral sequence. We show that the spectral sequence is closely related to the Hubble morphological sequence. This result suggests that a single parameter is responsible for the spectral sequence. Using the models of Bruzual & Charlot (1993), we show that this sequence can be parametrized by a time-scale of star formation characteristic of each morphological type. Our results are robust in the sense that the reality of the spectral sequence does not depend on the data normalization.

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