STAR FORMATION IN GALACTIC HALOS

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We report preliminary results of the study of galaxy formation in cosmological hydrodynamics simulations which include a star formation algorithm (Tissera et al. 1996, submitted MNRAS). These simulations correspond to a standart Cold Dark Matter universe of a typical region of the Universe using $N = 64^3$ particles with $\Omega_b = 0.1, b = 2.5, L =$ 10 Mpcs and $H = 50$ km s^{-1} Mpc. Superonova feedback mechanisms have not been considered.

We focused our analysis on the study of the relation between the star formation processes and the merger/accretion events. The evolutionary history of each galactic object identified at z = 0 was followed as a function of the look-back time. Our simulations allow us to have the history of star formation in each progenitor object and its satellites. We found that in all cases there is an increase of star formation when a merger with a clump of more than 10% the progenitor mass occurred. As an example to show the different evolutionary path of each galactic object, we compared in this poster the history of star formation and mergers of three objects identified at z = 0: a spheroidal and two disk-likes. On average, the disk-like objects suffer one or two mayor mergers with a satelite with mass greater than 10% of the progenitor mass, whereas the spheroidal object suffers three encounters with clumps of 95%, 38% and 11% of the progenitor mass, along their evolution. A more detailed description of the properties of the galactic halos and their dependence on the models are being carried out by Tissera & Dominguez.

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THE X-RAY TO RADIO ENERGY DISTRIBUTION OF STARBURST, NORMAL AND ACTIVE GALAXIES

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We present the results of an extensive literature search of multiwavelength data for a sample of 59 galaxies, composed of 26 Starbursts, 15 Seyfert 2's, 5 LINER's, 6 normal spirals and 7 elliptical galaxies. The data contain soft X-ray fluxes, ultraviolet and optical spectra, near, mid and far infrared photometry and radio measurements, selected to match as closely as possible the *IUE* aperture (10×20 arcsec). The galaxies were separated into 6 groups with similar morphological or activity properties, namely, Normal Spirals, Normal Ellipticals, LINER's, Seyfert 2's, Low reddening Starbursts ($E(B-V)$ <0.4) and High reddening Starbursts ($E(B-V)$ >0.4). For each one of these groups we created average spectral energy distributions (SED), which were then compared to look for similarities and differences.

We conclude that one can use the SED's to distinguish between two pairs of activity classes. Seyfert 2's have markedly different mid and far-IR fluxes from LINER's. Starbursts of Low and High reddening can be distinguished based on their UV and far-IR emission, because of the dust absorption (in the UV) and emission (in the far-IR). Within our uncertainties, the SED's of Normal Ellipticals and Spirals are similar over the entire wavelength range. The SED of normal galaxies can be distinguished from those of active ones (Starbursts, LINER's and Seyfert 2's) by the lower mid and far-IR, and UV emission, relative to the visual. The SED's of Low and High reddening Starbursts can be easily differentiated from those of LINER's and Seyfert 2's based on their larger UV/visual ratio.

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MASS-LOADED MODELS OF ULTRACOMPACT H II REGIONS

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Our understanding of the early evolution of stellar H II regions is undergoing a revolution. Radio observations of the very youngest regions, which are still swathed in molecular material, find very compact structures in far higher numbers than would be expected from the 'classical' theory. A wide range of morphologies are found for these regions —many theoretical models have been proposed to explain their properties.

We have modelled the regions as the result of the interaction between a young, massive star and the clumpy molecular material which surrounds it. This model naturally explains the observed shapes of many of these regions. In particular, the widely-discussed 'cometary' morphology can be explained by a gradient in the intensity of mass-loading, without requiring large stellar velocities. The models predict kinematical structures which can be compared with forthcoming observations. For details, see the references below.

Mass-loading will also be important in many other types of ionized region (for instance older stellar H II