SYNTHETIC M/L$_B$ RATIOS FOR E AND S GALAXIES

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We report new calculations of M/L$_B$ ratios for galaxies, which are considered to be closed homogeneous systems. A Salpeter's law was assumed for the initial mass function. The star formation rate was considered to be proportional to the amount of available gas. Spiral galaxies were considered to be constituted by two components: the bulge and the disk. Each component is characterized by its own timescale for the gas convertion into stars. We used the bulge-to-disk average light ratios by Koppen & Arimoto (1990) in order to derive the integral properties for the different morphological types. In our computatios we used the grid of models by Maeder & Meynet (1988) for stellar masses in the range $100 < m < 1$ and the evolutionary tracks compiled by Bruzual (1982) for lower masses.

The representative models for E-galaxies are characterized by an e-folding timescale for gas convertion of 1.36 Gyrs. The resulting properties are given in Table 1, and the main characteristics of our composite models for S-galaxies are given in Table 2.

Table 1 - E-galaxy properties

$(B-V)$	M/L$_B$	M$_{HI}$/M$_{TOTAL}$
0.85	15	1.6×10^{-5}

Table 2 - S-galaxy models

	Total		Disk			Bulge		
Type	$(B-V)$	M/L$_B$	$(B-V)$	M/L$_B$	τ(Gyrs)	$(B-V)$	M/L$_B$	τ(Gyrs)
Sa	0.71	6.5	0.67	5.0	4.1	0.80	10	2.1
Sb	0.63	5.1	0.55	3.0	7.3	0.80	10	2.1
Sc	0.53	2.4	0.50	1.6	9.6	0.81	11	2.0

Bruzual, G.: 1982, PhD thesis, University of California
Koppen, J., Arimoto, N.: 1990, A&A 240, 22
Maeder, A., Meynet, G.: 1988, A&AS 76, 411