

SOME REMARKS ON OBSERVATIONAL PROBLEMS FOR DISK-GALAXY EVOLUTION

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Observational objections against an important role of evolution in morphological differentiation of disk-galaxies (Burnstein 1979, Dressler 1980b, Kent 1985) are summarized together with the results of their detailed analysis (Salvador-Solé et al. 1987a and 1987b):

i) Morphological segregation is independent on cluster characteristics.

Under a very simple assumption (power-law density profiles) it can be shown that the 2-D correlation implies a 3-D morphological segregation (i.e., the intrinsic one) which depends on cluster concentration.

ii) Bulge luminosities in S0 galaxies are greater than in S ones.

If one limits Dressler's catalog (1980a) in *bulge magnitude*, the derived composite apparent magnitude luminosity functions for the bulges of S0 and S types are found to be very similar (see Fig. 1).

iii) Bulge luminosities are greater in higher density regions.

Bulge luminosity functions of S and S0 types together are also shown to be very similar (see Fig. 2) in high and low density regions.

**Conclusions:** Present observational data do not seem to constitute any firm objection against evolutive mechanisms and seem to point at a *universal bulge luminosity function*. If confirmed the latter would be an important constraint for any theory of galactic formation/evolution.

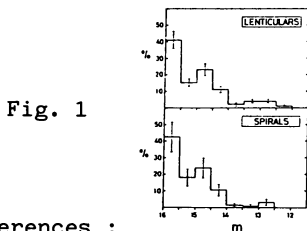


Fig. 1

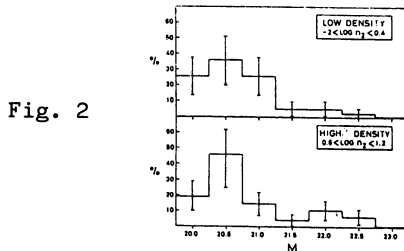


Fig. 2

**References :**

Burstein, D. 1979. *Ap.J.* 234, 435  
 Dressler, A. 1980a. *Ap.J. Suppl.* 42, 565  
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