

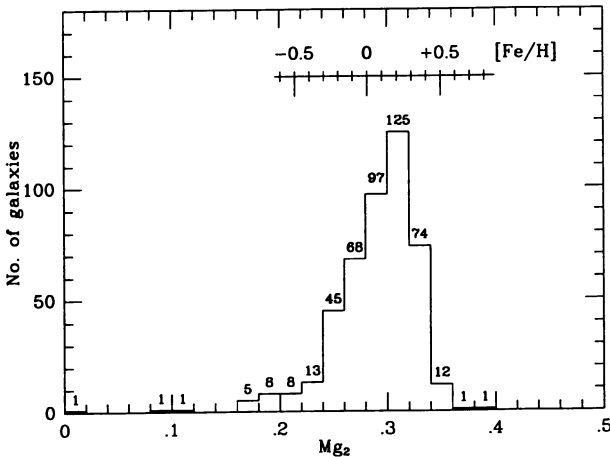
**METALLICITY DISTRIBUTION OF ELLIPTICAL GALAXIES THROUGH A QUANTITATIVE CALIBRATION OF THE MAGNESIUM  $Mg_2$  INDEX**

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In this contribution we give a progress report for our work intending to approach in a more complete way the problem of a quantitative calibration of the  $Mg_2$  index (Faber *et al.* 1977, *A.J.*, **82**, 941; Buzzoni, Gariboldi & Mantegazza 1991 submitted to *A.J.*). We have first investigated empirically the relationship between the index and the fundamental parameters for a wide set of Galactic standard stars deriving a detailed calibration for dwarfs and giants. This allowed to build up synthetic models for stellar populations exploring  $Mg_2$  in the galaxies with varying overall distinctive parameters of the populations.

The global dependence of  $Mg_2$  on  $[Fe/H]$  is found to be  $\partial Mg_2 / \partial [Fe/H] = 0.135$ , in agreement with the empirical estimate derived by Brodie & Huchra (1990, *Ap.J.*, **362**, 503) considering both Galactic and M31 globular clusters. When applying our calibration to the exhaustive sample of local ellipticals observed by Davies *et al.* (1987 *Ap.J. Suppl.*, **64**, 581) as shown in Fig. 1, we find that galaxies display a mean metallicity enhanced by 20–60% respect to the solar value spanning over one order of magnitude at the extreme edges of their assumed fiducial distribution.



**Fig. 1** - Metallicity calibration for elliptical galaxies in the Davies *et al.* (1987) sample. Galaxies are assumed 15 Gyr old with a canonical Salpeter IMF.