

AGE AND METALLICITY DISTRIBUTION OF THE DISK STARS FROM EDGE-ON GALAXIES

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Due to the increasing velocity dispersion $\sigma(t)$ and vertical thickness of the stellar distribution with age t the composition of the disk population in age and metallicity varies with height above the galactic plane. This results in a central steepening of the vertical luminosity profiles and in characteristic colour gradients, which can be observed in edge-on galaxies. For the analysis of the vertical profiles we use a self-gravitating disk composed of isothermal subcomponents according to a $SFR(t)$ with increasing $\sigma(t)$ and decreasing $[Fe/H](t)$ as a function of age t . The broad band luminosities and metal indices are computed with the photometric evolutionary synthesis method (Just, A., Fuchs, B., Wielen, R. 1996, *Astron. Astrophys.* **309**, 715). The vertical colour profiles give a useful tool to derive the age distribution of the disk, but for the metal enrichment additional spectral information is necessary. In Fig. 1 the discriminating power of the Mg_2 -index is shown in an example.

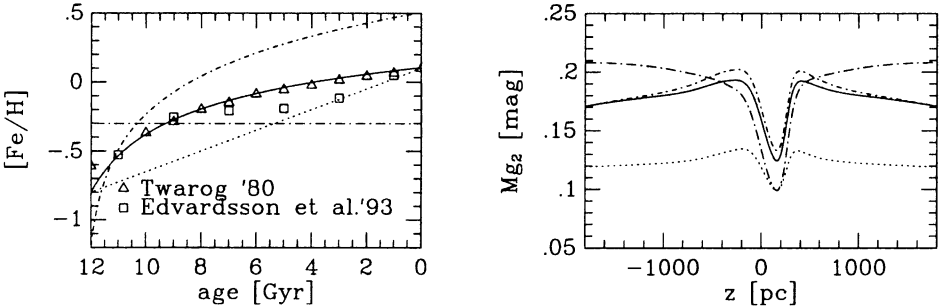


Figure 1. Left: Different metal enrichment functions compared to the observed data of the solar neighbourhood. Right: Vertical profiles of a disk with a $SFR(t)$ and $\sigma(t)$ typical for a late type spiral using the different $[Fe/H](t)$ functions. The inclination is $i=89.5^\circ$.