

## THE SIGNATURES OF GALACTIC DISK EVOLUTION IN VERTICAL COLOUR PROFILES OF EDGE-ON GALAXIES

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Galactic disks are heated by some gravitational scattering process. The velocity dispersion and scale height increases with the age of the stellar populations as can be observed directly in the solar neighbourhood. This evolutionary effect can also be derived from the vertical structure of spiral galaxies seen edge-on. We use a physical model of a selfgravitating disk composed of isothermal subpopulations with increasing age and velocity dispersion and an exponential dust distribution (Just et al. 1995). The emissivity of the stars is computed from the luminosities in the different bands of single age populations which are computed with the method of photometric evolutionary synthesis (Einsel et al. 1995).

We apply these models to profiles of the edge-on galaxy IC 2531 in U,B,V,R,I,K bands and on CCD data of NGC 891 in V,I, and K. We find that the general features of the luminosity and colour profiles are well reproduced by the models. For IC 2531 we find the same stellar composition in age and metallicity as in the solar cylinder but with a different heating rate. In NGC 891 the central blue disk is much stronger consistent with a constant SFR instead of a strongly decreasing one.

### References

- Einsel, C., Fritze-v. Alvensleben, U., Krüger, H., and Fricke, K.J. (1995) *A&A* **296**, 347  
Just, A., Fuchs, B., and Wielen, R. (1995) submitted to *A&A*