A METHOD TO DERIVE VELOCITY DISPERSIONS FROM COMPOSITE SPECTRA

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Different methods have been used to derive velocity dispersions of stellar populations in bulges of galaxies. In all cases, the spectrum of a K giant is used as template: the stellar spectrum convolved with the appropriate gaussian, the Fourier transform technique, or the cross-correlation technique (see Dalle Ore et al., 1991, for a review).

We propose to use as template a synthetic composite spectrum of a galactic metal-rich globular cluster. We base our method on the detailed studies of NGC 6553 by Ortolani et al. (1990). We have adopted a relative number of stars in each stage of evolution from a direct count in a V vs. (B-V) CMD. The main sequence population was derived using these counts, extented with a Salpeter IMF. NGC 6553 appear to have a solar metallicity (Barbuy et al., 1991).

The present sample of objects consists of 3 edge-on bright lenticular galaxies: NGC 0128, NGC 1381, NGC 1596, which are part of a program to study the properties of box-shaped galaxies (de Souza & dos Anjos, 1987).

The composite synthetic spectra of these galaxies was constructed using a library of synthetic spectra with stellar parameters cf. CMD of NGC 6553.

Our first preliminary results seem to show that the effects of velocity dispersion and metallicity can be disentangled. We estimate velocities of 170, 190 and 190 km s_{-1} for NGC 128, NGC 1381 and NGC 1596 respectively. The metallicities are all in the range [M/H] = 0.0 to +0.5; for NGC 1381, we estimate [M/H] $\approx$ +0.4, in agreement with that of [M/H] = +0.2 derived by Pickles (1985).

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