

POPULATION SYNTHESIS IN STARBURST GALAXIES

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Abstract

Spectral energy distribution for a sample of starburst galaxies has been synthesized. The proposed sample contains galaxies whose optical light is mainly dominated by an early type galaxy population. A low excitation nebular spectrum is superimposed whose strength in the H α emission line suggests the presence of very massive stars responsible of the observed ionization. In order to reproduce their integrated spectral distribution a composite model is proposed. This essentially considers the contribution of an old population in which a new burst of star formation is undertaken. The burst is assumed to be a combination of ionizing clusters with ages between 3.5 and 10 Myr. The proposed model can adequately fit the observed both continuum distribution and Balmer absorption lines and accounts for the emitted H α luminosity. The inferred mass of the ionizing cluster for the sample of galaxies analyzed is of the order of $10E7$ Mo. The figure shows a representative spectrum of the sample. The derived model, superimposed in the figure, contains an E0 population contributing 70% to the light at 5500 Å, the remaining light been due to a combination of two young clusters, 4 and 10 Myr old.

