increase, which may be $> 10^9$ yr for several of the situations of interest. After the density increase and the associated energy input subside, the system slowly recovers by coalescence. Similar behavior is expected for any model in which cloud collisions are important. If the density has increased sufficiently during the "incubation"period, the new equilibrium state of the model is unstable to a time-delay bifurcation leading to a large amplitude burst of star formation with duration $< 10^8$ yr, independent of the timescale of the density increase. The model suggests that starbursts associated with collapse, accretion, or inflow events should be preceded by a long "gestation"period with a small SFR. For example, the initial star formation burst in a protogalaxy may be delayed for several billion years until nearly all the infalling material has been accreted onto the growing central object.

STAR FORMATION IN GALAXIES CONTROLLED BY IONIZATION OF HYDROGEN AND SUPERNOVAE EXPLOSIONS

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The process of star formation in disk galaxies is studied in the frame of a simple analytical model which takes into account the heating of interstellar medium by ionization and the acceleration of turbulent motion of gas clouds by supernovae explosions. The kinetic energy of gas turbulent motion is dissipated in gas clouds collisions with characteristic time of dex 8 yrs. Stationary star formation rate is estimated as the function of the mass, radius and thickness of the galaxy. Possible reasons of star formation bursts are briefly discussed.

INITIAL MASS FUNCTION IN STARBURST GALAXIES WITH DIFFERENT METALLICITY

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We present a simple analysis of the massive population in 8 starburst galaxies and 4 blue compact galaxies (BCG) based on the *UV* equivalent widths of the p-cygni lines Si IV λ1400 and C IV λ1550 using calibrations and data reported by Sekiguchi and Anderson (1987*a,b*). These lines are characteristic or early OB stars and so are good indicators of the massive stellar content.

We also estimated the mean ionizing effective temperature $\langle T_\star\ ioniz\rangle$ and the mean oxygen abundance (O/H) in these objects employing direct methods, semi-empirical methods and theoretical photoionization models previously reported. In general, we found good agreement among different calculations of metallicities, which gives support to the semi-empirical and theoretical estimations.

We interpret our results as a possible evidence that suggests that in the lower metallicity objects there are, either a larger proportion of massive stars, or a larger upper mass limit for stellar masses. However, only in the last case we are able to explain the relation between $\langle T_\star\ ioniz\rangle$ and metallicity (Z) derived using photoionization models.

This result could be relevant for theories of star formation and for galactic evolution models.

MASSIVE STARS AS POSSIBLE IONIZING MECHANISM IN SEYFERT GALAXIES

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The recent evolution models of very high massive stars published by Maeder and Meynet (1988, *Astr. and Ap. Suppl.*, **76**, 144) has been used to synthesize the stellar population of very young associations. The Maeder models are computed for local galactic metallicity and include such effects as mass loss due to stellar winds and overshooting. In order to check the importance of these hot stars in an ionizing cluster, we have made a grid of models which reproduce the ionizing continuum of cluster with age from 1.0E6 to 1.0E7 yrs and considered a standard IMF with a cutoff at 120 solar masses. Because the number of high massive stars reach a maximum for a cluster of age 3E6 yrs, we have chosen to check if its ionizing continuum is hard enough to reproduce the observed spectrum in Seyfert galaxies. Following photoionization calculations, we find that the cluster energy distribution was almost as successful as a 100 000 K blackbody for reproducing the mean Seyfert 1 line ratios due to a narrow peak around 54 eV. In the optical *UV* the energy distribution was that of a 40 000 K blackbody only. The He II discrepancy remains a problem that could be solved by a soft X-ray component or a different IMF or upper mass cutoff.