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## CATALOGUE OF MASSES OF OPEN CLUSTERS

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**ABSTRACT.** A code that allows us to obtain the mass of an isolated star (see: Code for calculating the mass of a star onto the HR diagram, 1993; S. Paoli et al.) from its position in the observational HR diagram is devoted to the determination of the total observed mass of an open cluster. Likewise, our aim is to compute spectra of masses and Initial Mass Functions (IMFs) and check possible variations in the slope of these functions, which can be related with the galactocentric positions of these objects (i.e. if Salpeter's Law varies or not).

The goals of this paper are: First, to deal with the necessity of devising a large homogeneous catalogue of masses of open clusters. Second, to analyze the universality of the mass spectrum, the rate of star formation and possible changes in the star formation conditions.

In order to accomplish the first of these goals, we have applied the subsequent work scheme:

- 1) The data would mainly be UBV photoelectric ones.
- 2) It shall be taken into account the spectroscopic information of cluster stars to approximate better the evolutionary situation of evolved stars.
- 3) Memberships, reddening and distances will be re-determined.
- 4) Finally, the mass of each member star, making use of the corresponding code will be yielded.
- 5) As several stars appear to be describing one of the "loops" predicted by the theory of the stellar evolution we will give the probability of their positions.

Once the study of the items mentioned above is finished, we will get the total mass of the cluster and the corresponding IMF. And for the second proposed goal we have the subsequent plan:

- 1) Control the initial mass function shifts of the cluster from the global mass spectrum.
- 2) Study selection effects that may change the IMF slopes:
  - a) background stars,
  - b) different mass ranges and
  - c) observational conditions.
- 3) Analyze the variations of the IMF taking into account the:
  - a) chemical composition and
  - b) dynamical evolution of each cluster.
- 4) Take into consideration the stars that have an abnormal evolution affecting the IMF.
- 5) Investigate the slope variations of the IMF as we move radially into the galactic plane.