CHARACTERISTIC PARAMETERS OF THE STELLAR POPULATIONS IN THE MILKY WAY GALAXY

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We attempt to characterise statistically the evolutive parameters of the stellar populations in the Milky Way Galaxy using multi band photometry (Gaia, Tyco 2, SDSS, WISE y 2MASS). Towards this goal, we perform a comparison between the color magnitude diagrams obtained from the observations and from a stellar population synthesis model. Finally, we apply these results to build up a model of the stellar populations of our Galaxy, which will be necessary for further investigations related to the detection of satellite galaxies in the galactic halo.

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A PHOTOMETRIC MEMBERSHIP STUDY IN THE STAR FORMATION REGION LDN 1588

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We present preliminary results of a memership study conducted in the region LDN 1588 located in the λ Ori Star Forming Region (LOSFR). LDN 1588 is particularly important due to it is located on a dust ring formed by material associated to a possible supernova event occurred 1 Myr ago. The study is based on VRI photometry obtained with the instrument OSMOS coupled to the 2.4 m telescope of the MDM Observatory. Based on photometric criteria, we identified 999 photometric members and 1585 possible photometric members of the cloud. The results presented become an important part of future work related with spectroscopic confirmation of youth and disk census in LDN 1588.

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STELLAR AND WIND PARAMETERS OF MASSIVE STARS FROM SPECTRAL ANALYSIS

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The only way to deduce information from stars is to decode the radiation it emits in an appropriate way. Spectroscopy can solve this and derive many properties of stars. In this work we seek to derive simultaneously the stellar and wind characteristics of A and B supergiant stars. Our stellar properties encompass the effective temperature, the surface gravity, the stellar radius, the micro-turbulence velocity, the rotational velocity and, finally, the chemical composition. For wind properties we consider the mass-loss rate, the terminal velocity and the line–force parameters (α, k and δ) obtained from the standard line–driven wind theory. To model the data we use the radiative transport code Fastwind considering the newest hydrodynamical solutions derived with Hydwind code, which needs stellar and line–force parameters to obtain a wind solution. A grid of spectral models of massive stars is created and together with the observed spectra their physical properties are determined through spectral line fittings. These fittings provide an estimation about the line–force parameters, whose theoretical calculations are extremely complex. Furthermore, we expect to confirm that the hydrodynamical solutions obtained with a value of δ slightly larger than ~ 0.25, called δ-slow solutions, describe quite reliable the radiation line-driven winds of A and late B supergiant stars and at the same time explain disagreements between observational data and theoretical models for the Wind–Momentum Luminosity Relationship (WLR).

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