

From star clusters to field populations: survived, destroyed and migrated clusters



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Young Stellar Clusters as gamma-ray sources

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In the last ~10 yrs, several young stellar clusters have been associated to diffuse gamma-ray emission in the energy range from ~1 GeV up to ~100 TeV. In particular in the region close to the association Cygnus OB2 photons up to the incredible energy of 1.4 PeV have been detected by LHAASO. The origin of the non-thermal particles responsible for the gamma-ray emission is not completely clear. Here we present a model based on particle acceleration at the wind termination shock of the collective wind generated by massive stars in the cluster. This model requires as an input the wind kinetic power, which depends on the IMF and age of the clusters. We will critically discuss those aspects.

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