

Gaia-based comparative study of protoplanetary disk frequencies in young stellar clusters.

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Abstract

This poster presents the results of a recent work (Mendigutía et al. 2022, *A&A*, 664, A66), where we have compared protoplanetary disk frequencies inferred from 2 widely different regions corresponding to 2 pc and 20 pc from the centers of a representative sample of young stellar clusters. Gaia EDR3 parallaxes and proper motions, along with a best suited tool (*Clusterix*), were used for membership determination. Near-infrared color-color diagrams served to identify disk sources. Our results cover the largest fields ever probed when dealing with disk fractions for all clusters analysed. Although the density of member stars decreases outside the clusters' centers, the absolute number of members is significantly larger in the peripheries, implying that the complete characterization of young clusters requires to probe wide fields. In turn, our comparative study does not support a previous hypothesis proposing that disk fractions should be significantly larger considering extended regions. On the contrary, disk frequencies inferred from the 2 pc- and 20 pc- regions are typically equal within 10%. The resulting database is stored in a [Virtual Observatory-compliant archive](#), constituting a benchmark for future detailed studies of young clusters.

My poster is available at <https://zenodo.org/record/7023372#.Y5LK4tLMKU1>