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Gaia and the Lithium Depletion Boundary technique: towards accurate young cluster ages.

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Abstract

Stellar ages are critical for a better understanding of various astrophysical phenomena. However, many techniques for estimating ages are highly model-dependent. The lithium depletion boundary technique, LDB, estimates ages in stellar associations ranging from 20 to 500 Ma based on the presence or absence of lithium in low-mass stars. This poster presents the results of our work (Galindo-Guil et al. 2022, A&A, 664, A70), where we revise former LDB ages in stellar associations in a consistent way. We take advantage of the homogeneous *Gaia* parallaxes and derive bolometric luminosity estimations from spectral energy distributions using multi-wavelength photometry rather than relying on monochromatic bolometric corrections. We locate the LDB systematically and homogeneously and provide a reliable age scale. Finally, we compare these results with other age-determination techniques, such as isochrone fitting and 3D kinematics, and discuss the reasons for any inconsistencies.

My poster in zenodo.org can be found here