

The lithium-age relation: Calibration with open clusters and associations observed with the Gaia-ESO Survey and dependence with stellar parameters.

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Abstract

In this work we made use of the lists of candidate members obtained by Gutiérrez Albarrán et al. (2024) for a target sample of 42 open clusters, ranging from 1 Myr to 5 Gyr and observed within the *Gaia*-ESO survey (GES), with the aim of studying Li as an age indicator and deriving an empirical Li-age relation for FGK late-type stars. We conducted a comparative study that allowed us to quantify the observable Li dispersion in each cluster, and analyse in detail its dependence with several other stellar parameters derived from GES: rotation, chromospheric activity ($H\alpha$), accretion processes, and metallicity. We also compared our analyses with various correlations and findings of earlier publications, from the Li-rotation and Li-activity connections, to the effects of metallicity in the Li depletion of coeval clusters. The identification of likely candidates for all clusters and the characterization of their properties allowed us to calibrate a Li-age relation and obtain a series of empirical Li envelopes for key ages in our sample.

My poster in zenodo.org can be found here