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Abnormal behaviour of lithium in coeval stars?

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Abstract

Due to its fragility, the light element lithium (Li) is an excellent and very used indicator of stellar processes. Our interest here is to explore and try to understand the Li dispersion observed in some stellar open clusters which are not explained by the standard theories. A typical and historical case, for example, is that found for stars cooler than the stellar effective temperature Teff $\sim$ 5500 K in the Pleiades cluster with an age of $\sim$ 130 My (see details in Figure 2of this poster). What is the mechanism that provoques this dispersion?. Up to now, mainly three mechanisms are being proposed : (1) Episodic accretion during the protostellar phase (Barafee et al. 2010). (2) Rotational stellar internal mixing shears due to a star-disk interaction (Eggenberger at al. 2012) and (3) Li depletion by an increased stellar radius (Somers et al. 2014) We will wxplorw this problem using the rotational option (2) (Chavero et al. 2014) and also identifying stellar interlopers in some groups.