

## Improvements in age determinations from isochrone fitting using Gaia parallaxes

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Age estimates from isochrone fitting of spectroscopic parameters (effective temperature, surface gravity and metallicity) of field stars can be very uncertain (order of 50%). These large uncertainties inhibit the use of stellar ages in for instance galactic archaeology studies. The parallaxes provided by Gaia can significantly improve age estimates from isochrones. Here we present results from isochrone fitting with UniDAM (Unified tool for Distances, Ages and Mass estimation) that incorporate Gaia parallaxes in a consistent way. The use of parallaxes of Gaia DR1 allows us to improve our age and distance estimates substantially - by about 30% in  $\log(\text{age})$  and about 50% in distance modulus. We also show that further improvements can be expected from future Gaia data releases, bringing  $\log(\text{age})$  uncertainties to about 0.1 dex and distance modulus uncertainties down to 0.01 mag.

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