# Radial Migration

# Open Clusters VS Field Stars

Does Migration shape the radial distribution of Field Stars and Open Clusters in exactly the same way?

**WE ALREADY KNOW THAT...**

Stars and clusters gain/lose angular momentum from interactions with the bar, spirals, giant molecular clouds.

**HOWEVER...**

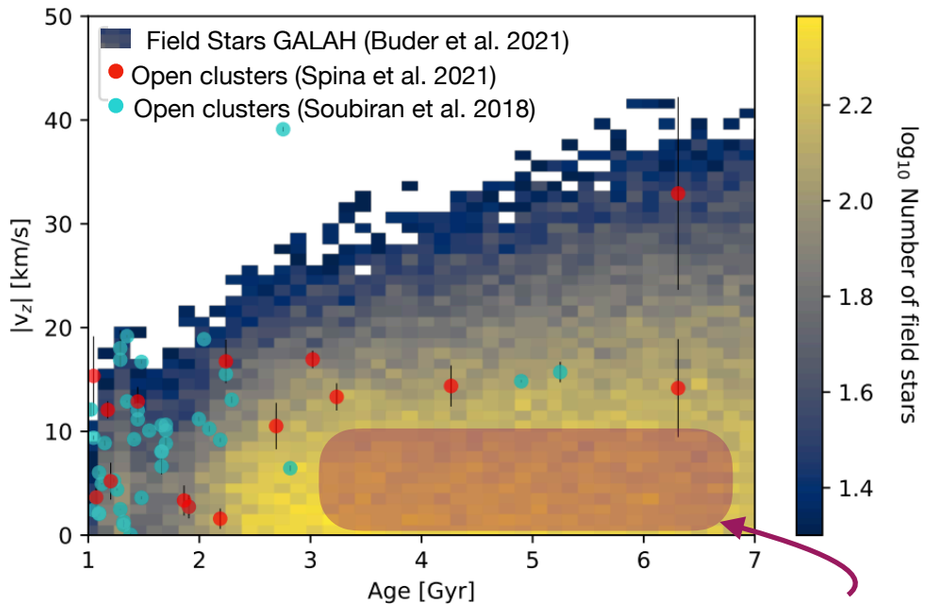
The same interactions cause dissipation of open clusters. This induces a selection bias in the open cluster population.

The **OPEN CLUSTERS** that we observe today are **SURVIVORS** of the Galaxy.

They are
- YOUNG CLUSTERS. They have not undergone numerous interactions with the MW potentials.
- OLD CLUSTERS living most of their time far from the MW potentials.

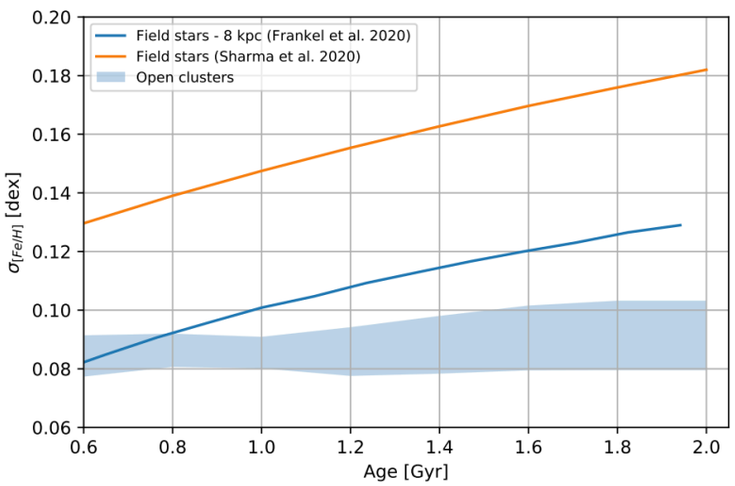
Either way, existing Open Clusters have undergone only few interactions with the MW potentials. This is a selection bias in the Open Cluster population.

Thus, the demography of **OPEN CLUSTERS** and that of **FIELD STARS** are shaped by Galactic potentials in **TWO DIFFERENT WAYS**.
Have Open Clusters conserved most of their angular momentum?

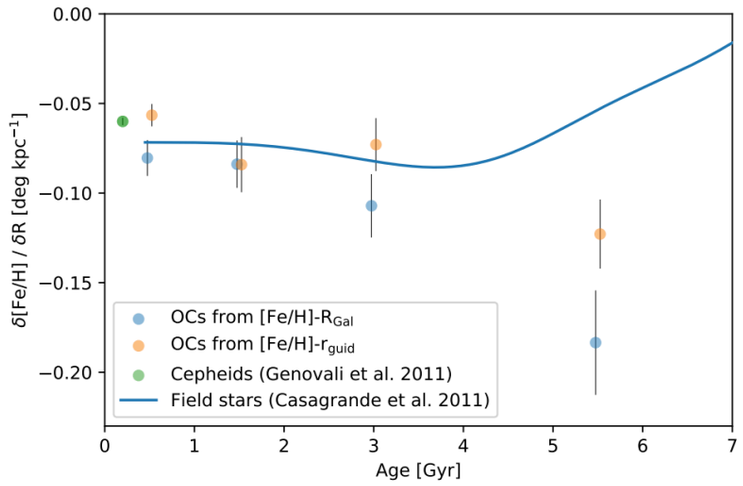



**Why are there no old Open Clusters near the midplane?**
**Because they have been "killed" by the Milky Way**

There are other **OBSERVATIONAL EVIDENCES** of the **GALACTIC SELECTION EFFECT** in **Spina et al. (2021, MNRAS, 503,3)**




The chemical scatter traced by OCs across the Galactic disk is smaller than what is predicted from Field Stars




The radial metallicity gradients traced by OCs and Field Stars evolve in different ways

By the way,

Here you also find a catalog of **134 open clusters** with high-quality **abundance determinations** (iron, α-elements, iron-peak, n-capture).

**Cluster members** are carefully identified in the α-δ-$\mu_\alpha$-$\mu_\delta$cosδ-π space.

The dataset also includes **radial velocities**, **orbital actions**, **guiding radii**, etc...

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