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Exploring chemical tagging limitations and feasibility with Gaia-ESO Survey (poster pitch)

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Chemical tagging is a promising technique for studying and reconstruct the history of our Galaxy by grouping stars based on their similar chemical compositions. To investigate the feasibility and effectiveness of this technique, we utilized high-resolution observations from the Gaia-ESO Survey with Gaia DR3 data to select open clusters and field stars, obtaining additional information on ages and distances from the StarHorse code. Our preliminary results focus on analyzing the importance of heavy elements in the chemical tagging process, as well as exploring the impact of abundance errors, the recovery fraction of open cluster members, and addressing the contamination from field stars. Through these investigations, our aim is to advance our understanding of implementing chemical tagging, which could provide valuable constraints for future models on mixing and chemical enrichment.

Primary author: PEROTTONI, Helio (Nicolaus Copernicus Astronomical Center, Polish Academy of Sciences)

Co-authors: Mr SMILJANIC, Rodolfo (Nicolaus Copernicus Astronomical Center, Polish Academy of Sciences); Ms DANTAS, Maria Luiza (Nicolaus Copernicus Astronomical Center, Polish Academy of Sciences)

Presenter: PEROTTONI, Helio (Nicolaus Copernicus Astronomical Center, Polish Academy of Sciences)

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