

Comparative analysis of Gaia DR3 GSP-Spec and Gaia-ESO DR5.1

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Gaia is a gift for the stellar community: it brings us not only the largest catalogue of stars with 3D-velocities but also the largest catalogue of stars with homogeneously-obtained atmospheric parameters, namely the effective temperature, the surface gravity and two global abundances ($[M/H]$ and $[\alpha/Fe]$), as well as some individual abundances of elements probing different nucleosynthetic origins (e.g., Ca, S, Ni, Ce). These chemo-physical quantities are crucial to investigate the chemo-dynamical evolution of stellar populations forming the Milky Way. The Gaia RVS survey relies on space-based spectroscopy at resolution 11500 over a small wavelength range centred on the infrared Ca II triplet. We perform a comparative analysis of the Gaia RVS radial velocities, photospheric parameters and abundances to those obtained by the higher-resolution Gaia-ESO survey. There is an excellent agreement between the radial-velocity scales of these two surveys (given their respective uncertainties). For the Gaia RVS photospheric parameters and abundances, the agreement between the two sets of inferred parameters is good for targets brighter than about $G = 11$ while there is an increasing scatter for fainter targets. We show that averaged abundances (eg for clusters) can be used to recover the properties of Milky Way stellar populations.