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MAVIS to trace old stellar populations far far away in the Halo

We introduce the role played by variable stars (RR Lyrae, Type II Cepheids) to trace old stellar populations across the Galactic spheroid. Moreover, we discuss the advantages in using standard candles that can provide individual distances with an accuracy better than 3% across the Galaxy and in nearby stellar systems. We also review recent findings concerning the use of variable stars to investigate the early chemical enrichment of the Galactic Halo and the possible occurrence of a metallicity gradient between inner and outer Halo.
Moreover, we also outline the impact that abundance distribution and kinematics have to constrain the fraction of Halo stellar populations formed either in situ or accreted.
Finally, we discuss the role that MAVIS will play to constrain the chemical composition and the kinematics of field RR Lyrae located in the outskirts of Galactic Halo (V~20-21 mag, d~100 kpc)

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