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Metal poor stars in Gaia

The study of the oldest and most metal-poor stars in our Galaxy promotes our understanding of the cosmic chemical evolution and the beginning of Galaxy and star formation. However, they are notoriously difficult to find, with only 5 stars of [Fe/H]<-5 having been detected to date. Thus, the spectrophotometric data of ˜1 billion stars which will become available with the third Gaia Data Release, comprise a very promising set for the identification of candidate metal-poor stars.

In this talk I shall present preliminary results of our candidate selection method in development, based on combinations of flux-ratios from BP/RP (Blue Photometer/Red Photometer) Gaia spectra. I shall demonstrate that these data do in fact contain enough information to identify iron-deficient stars, despite their very low spectral resolution. The method presented here can therefore soon be used to help populate the poorly constrained tail of the metallicity distribution function of the stellar halo of the Galaxy.

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