Abstract

The stellar halo of the Milky Way is the ideal place to look for fossils tracing the formation history of the Galaxy. However, the small number of halo stars found in the solar vicinity makes it challenging to get robust constraints on its structure. Using joint info from the Tycho-GAIA catalogue and the RAdial Velocity Experiment (RAVE) we define a new position- and metallicity-unbiased classification of halo stars based on their 6-D position-velocity. We discard disc stars with high circularities from the sample and we select only stars with halo kinematics using state-of-the-art self-consistent dynamical models. Using this novel sample I will discuss the resulting halo's metallicity distribution, which we find to be peaked at ~-1.7 [Fe/H] with a significant tail up to ~-0.3 [Fe/H], the halo's local kinematics, from which we do not see significant net rotation, and the halo's velocity ellipsoid, which points towards the Galactic centre implying a nearly spherical dark matter halo for our Galaxy.