

Can the Oosterhoff dichotomy unveil the formation of the Galactic Halo?

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The Gaia mission astrometric and photometric data releases have revolutionized our knowledge about the Milky Way. The discoveries of ancient merging episodes with a range of satellites and progenitor galaxies, such as Gaia-Enceladus, Sequoia, Kraken and others, led to new insights on the formation of the Galactic halo. We investigated pulsational, photometric, kinematic and chemical properties of RR Lyrae variable stars located in Galactic Globular Clusters (GGCs) and among the Galactic halo populations to probe the possible correlation between the Oosterhoff behaviour and past merging episodes. To this purpose, we adopted the Gaia Data Release 3 (DR3) combined with the literature compilation of radial velocities from the large surveys. The association between the different populations of RR Lyrae with Galactic halo substructures is explored using the integral of motion space diagrams that are computed on the basis of observables. We also discuss the comparison with the Galactic Halo studies by Belokurov and Kravtsov (2023) and Callingham et al. (2022) and the implications of our results for a better understanding of the origin of the Oosterhoff dichotomy and of the assembly history of the Galactic halo.

sessioni congresso

Stelle, popolazioni stellari e mezzo interstellare

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