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Dynamical mixing of multiple populations in globular clusters.

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Globular clusters (GCs) have multiple populations identified through abundance variations in a number of light elements. These populations also show, in some cases, differences in some dynamical properties such as their concentration, systemic rotation, and velocity anisotropy, differences that might still preserve partial memory of the initial configuration of the stellar populations. In this work, we analyse the degree of dynamical mixing of the multiple stellar populations in GCs, following the dynamical evolution of simulated GCs with multiple populations and tracing the mixing of the populations in the phase-space of energy and angular momentum. We connect the intrinsic phase-space mixing with the differences in the projected angular momentum and the velocity anisotropy of each stellar population. We also explore the signatures of dynamical mixing on the degree of energy equipartition of the stellar populations. Finally, we show the prospects for observing the signatures in angular momentum, velocity anisotropy, and energy equipartition in Galactic GCs.

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