

Agostino Leveque - MOCCA survey database I: preliminary results on Extra Galactic Globular Clusters

Wednesday, June 12, 2019 10:10 AM (20 minutes)

The dynamical state of Globular Cluster (GC) strongly depends on the initial cluster conditions and evolution on stars and binaries. Moreover, the observed properties of Galactic and Extra Galactic Globular Cluster (EGGC) can be effected by their dynamical histories. In order to discriminate those effects, numerical simulation of Globular Clusters evolution is needed. In my studies, the MOnTe Carlo Cluster simulAtor (MOCCA) code has been used.

I will present preliminary results from the dynamical evolution of Globular Cluster providing four prescription based on different mechanisms for neutron star (NS) and black hole (BH) supernovae kicks. In fact, a different kick velocity distribution of NS and BH would imply a different number of compact objects retained into the system, and strongly influence the long-term evolution of GC.

Finally, I will present how the dynamical state of an observed EGGC could change its colors. In this study, I simulated mock observations, in different photometric bands, of GCs from selected simulations in “MOCCA survey database I”, for distances greater than 1 Mpc. I expect that the obtained results contribute substantially to the observed bi-modality color distribution of EGGC.

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