

Physics & Astronomy Colloquium -
Spring 2020

Tuesday, Feb 18th at 3:30 pm in SC 234

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**The motif of globular clusters in and around
elliptical galaxies**

Our understanding of how galaxies evolve and interact with their environment depends critically on our ability to determine how they assembled. The abundance of observational probes of galactic assembly in the local Universe contrasts with the scarcity of observationally viable approaches at larger distances and in more diverse environments. In this talk, I will discuss the discovery of complex, extended two-dimensional structures in the spatial distribution of globular clusters (GCs) systems around massive early type galaxies (ETG). When these structures are interpreted as the results of mergers or accretion events undergone by the host galaxy, a simple prescription can be used to infer the properties of their progenitors and reconstruct the assembly history of their host, within the limitations imposed by the current availability of data. By expanding the investigation of the 2D spatial distribution of GCs to the intra-cluster GC population in massive cluster of galaxies, the growth of each host can be connected to the more general evolution of its environment and characterized as a function of the global properties of the different GCs components. With simulations becoming capable of following the birth and evolution of GCs under several formation scenarios for the host galaxy, I will make the case that this method can extend significantly our current capabilities to interpret physically the assembly of galaxies in observational regimes difficult to explore otherwise.

Refreshments at 3:00 pm in SC 103