Contribution ID: **406** Type: **Invited talk in a parallel session**

Galactic Heartbeat: are the Milky Way's Nuclear Star Cluster and Disc part of the same structure?

Friday, 12 July 2024 17:25 (25 minutes)

The innermost regions of most galaxies are characterised by the presence of extremely dense nuclear star clusters, which sometimes appear alongside larger stellar structures known as nuclear stellar discs. Understanding the relationship between nuclear star clusters and nuclear stellar discs is challenging due to the large distances to other galaxies, which limits their analysis to integrated light. In this context, the Milky Way's centre, which hosts both structures, serves as a unique template to understand their relationship and formation scenarios. Using photometric, metallicity, and kinematic catalogues, we analysed the connection between these two Galactic centre components and studied their stellar populations. We detected kinematic and metallicity gradients along the line of sight, suggesting a smooth transition between the nuclear stellar disc and cluster. Our results indicate that these two Galactic centre components might be part of the same structure, with the Milky Way's nuclear stellar disc being the extended edge of the nuclear star cluster.

Primary author: Dr NOGUERAS LARA, Francisco (ESO)

Presenter: Dr NOGUERAS LARA, Francisco (ESO)

Session Classification: Latest results from Galactic center observations

Track Classification: High-precision astrometry (HP): Latest results from Galactic center observations