



| | |
|-------------------|---|
| Evento | Salão UFRGS 2024: SIC - XXXVI SALÃO DE INICIAÇÃO CIENTÍFICA DA UFRGS |
| Ano | 2024 |
| Local | Virtual |
| Título | Unveiling the stellar population parameters of globular clusters in late-type galaxies through SED fitting analysis in multi-band surveys |
| Autor | PEDRO RIBEIRO FLORIANO |
| Orientador | CHARLES JOSE BONATO |

The understanding of the structure and properties of globular cluster (GC) systems allow us to unveil many aspects of its host galaxy formation and evolution. Therefore, it is of uttermost importance for one to be able to systematically identify GC candidates in and around galaxies. Moreover, the era of the big surveys such as LSST and J-PAS requires innovative and automatic pipelines to classify sources based only on their photometric information. Currently, we have a three stages pathway to apply over test cases. First, we assemble and prepare a photometric catalog of a galaxy and its surroundings. Second, these catalogs undergo the procedure to select potential GC candidates, for that we use the PCA and UMAP methods, producing a catalog of candidates. And finally, we apply SED fitting analysis, with the use of the Code Investigating GALaxy Emission CIGALE, here we input the candidate's photometry and the code identifies the optimal way to fit the data based on Single Stellar Population (SSP) Models, enabling us to determine the physical parameters of the objects in question (i.e. age and metallicity). Also, we are studying how different sets of filters affect the results, mainly looking for reducing the amount of data needed while still maintaining good results. The goal of this project is to lay grounds for potential new catalogs of extragalactic GC candidates containing their ages and metallicities, consequently improving the study of their host galaxy's formation and evolution. All achieved without the need of high cost spectroscopic observations.