

Exploiting the deepest Hubble Space Telescope Observations of Galactic Globular Clusters on:

"Studio di popolazioni stellari in ammassi tramite fotometria multibanda e spettroscopia - Multi-band photometry and spectroscopy of stellar populations in star cluster".

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The PhD student will analyze data of Globular Clusters collected with the Hubble Space Telescope in ultraviolet, optical, and near-infrared bands, including very deep WFC3/NIR images. The proposed research is mostly focused on:

- i) multiple populations among stars at different evolutionary stages, from the bottom of the main sequence to the horizontal branch.
- ii) binary stars of different masses and mass ratios and their possible connection with the multiple population phenomenon.

Results will provide important constraints on the formation of multiple populations and on their role in the assembly of the Milky Way.

The PhD student will be involved in an international team that comprises worldwide-recognized experts of the field.

She or he will develop expertise in high-precision photometry and astrometry by using the computer programs that are the 'state of the art' for the analysis of astronomical images. This expertise will eventually be exploited to extend the investigation of stellar populations to JWST data.