

Formation and evolution of the Nuclear Star Cluster in the Milky Way and other spiral galaxies on the cosmological time scale

Main goals to achieve:

- Numerical modelling of the formation of Nuclear Star Cluster through the dynamical interaction of Globular Clusters and the central region of the Milky Way, including strong interaction with the central Super Massive Black Hole.
- Accumulation of stars in Nuclear Star Cluster from Globular Clusters under the influence of the central Super Massive Black Hole using the direct N-body simulations.
- Comparison of Nuclear Star Cluster formation in disk galaxies similar to the Milky Way.

Planned results and impact:

- Gives a clearer picture of the formation and dynamic evolution of the Galactic Centre in the context of interactions with Globular Clusters in Milky Way.
- Dynamical process of destruction of the Globular Clusters under the influence of the Galactic Centre.
- Determination of the Globular Cluster mass loss rates under the influence of the Nuclear Star Cluster and Super Massive Black Hole.



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Milky Way globular clusters on cosmological timescales


III. Interaction rates

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Dynamics of supermassive black hole triples in the ROMULUS25 cosmological simulation

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The DRAGON-II simulations – II. Formation mechanisms, mass, and spin of intermediate-mass black holes in star clusters with up to 1 million stars

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