Institute of Space Sciences

EXCELENCIA MARÍA DE MAEZTU

Contribution ID : **4** Type : **Talk**

A View of the Intracluster Light and Intracluster Globular Clusters of the Perseus Cluster

Friday, 19 April 2024 09:35 (10)

Deep observations of galaxy clusters reveal a diffuse light component, the intracluster light (ICL), which contains a record of all the processes that the system has undergone and provides information about the mechanisms that have shaped the population within the cluster.
In this talk I will present the most comprehensive study to date of the ICL of the Perseus cluster, taking advantage of the exquisite high-resolution multi-wavelength images from Euclid's ERO. Thanks to Euclid's sensitivity and high spatial resolution, we are able to measure the radial surface brightness profiles of the brightest cluster galaxy (BCG) and detect the intracluster globular clusters (ICGCs) out to 600 kpc. The BCG+ICL profile requires two Sérsic components: a compact component, which we associate with the BCG, and an extended component, which we associate with the ICL and which provides most (64% in H) of the light and stellar mass within 500 kpc.
We find that the contours of the ICL and ICGC are not centred on the BCG at the largest scales (>200 kpc), but are instead offset by 60 kpc to the west of the BCG core, which we interpret as a sign of recent merger activity.
The colour of the ICL and the luminosity function of the ICGCs suggest that both intracluster stellar components were tidally stripped from the outskirts of massive ellipticals with masses of a few 10^10 Msun.

Primary author(s) : Dr MONTES, Mireia (IAC); Dr KLUGE, Matthias (MPE); Prof. HATCH, Nina (Nottingham); Dr GOLDEN-MARX, Jesse (Nottingham)

Presenter(s) : Dr MONTES, Mireia (IAC)

Session Classification : Clusters