Direction des Sciences de la Matière
IRFU
Service d'Astrophysique

SEMINAIRE régulier du Service d'Astrophysique

THE ABELL 1763 SUPERCLUSTER AND CONSTRAINTS ON THE INTRA-FILAMENT MEDIUM

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11h00

Many galaxies are found in complex environments: pairs, groups, clusters, and superclusters, which may affect the evolution of the galaxies within. Cosmological simulations predict that these clusters are connected on a larger scale by filaments, but because these large scale structures are so vast, and because they are of intermediate density, observational constraints on their properties are difficult to achieve, and are only now beginning. Abell 1763 is part of a supercluster whose large scale filament was the first discovered using 24micron imaging from Spitzer. Our team has studied this system in depth with Near-IR, Optical, and Radio images and we have confirmed its nature with ~1000 archival and new redshifts. We have found that the filament galaxies are more active than either those in the core, and those in the cluster outskirts. In this talk I will show that we have now been able to place a limit on the density of the Intra-Filament Medium (IFM) from the discovery of a rare bent double lobe radio source midway through the filament. From the bend of the radio source jets, we measure the density of the surrounding IFM to be 1-8x10^{-29} gm/cm3, consistent with direct probes of the IFM as well as theoreticalmodels. This is the first discovery of a bent double lobe radio source in a known cluster scale filament. Such objects may be used as beacons for large scale filaments.

Un café sera servi 15 minutes avant le séminaire

Ce séminaire aura lieu au CEA Saclay – Orme des Merisiers –bâtiment 709, Salle 003.

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