



PHYSICS AND ASTRONOMY

ARCNet

SPECIAL SEMINAR

Prof. Marc Huertas-Company

Observatoire de Paris

“Investigating Galaxy Evolution with Deep Learning”

Abstract

Deep learning is rapidly becoming a standard tool in many scientific disciplines including astronomy. I will review recent and on-going work on several applications of deep learning techniques to galaxy evolution related problems. I will show examples of how different network configurations can be efficiently used to classify galaxies into different evolutionary stages even when no apparent features are visible as well as to detect and measure substructures within galaxies such as bulges and clumps. I will also discuss unsupervised approaches based on generative models to compare numerical simulations and observations and detect anomalous objects. In my talk I will also try to show possible solutions to known limitations such as uncertainty estimation, small training sets and the “black box problem”.

Thursday, January 10, 2019

10:00 a.m.

Clearihue Building – Room C110