PHYSICS AND ASTRONOMY
SEMINAR

Dr. Nicola Amorisco

DARK Institute, Copenhagen

"Cosmology in Our Backyard: Supernova Feedback and Hierarchical Assembly in Dwarf Spheroidals"

Abstract

There are indications that a few bright dwarf Spheroidal satellites (dSphs) of the Milky Way are be hosted in large dark matter cores. However, interpretation of these results is made difficult by the uncertain role of baryonic feedback. By using the measured star formation histories (SFHs) of the Fornax and Sculptor dwarf Spheroidals and cosmologically-motivated mass-assembly histories, I have quantified the effect of supernova feedback in these dwarfs. I'll show that if SFHs were bursty at intermediate redshifts, feedback was indeed energetic enough to significantly alter the dwarfs' haloes.

I'll proceed by presenting new evidence for the hierarchical formation of dwarf galaxies. LCDM predicts that dwarf-dwarf mergers were not uncommon for galaxies at the same mass-scale as dSphs. However, clear observational evidence has been lacking so far, leaving the role of accretion and mergers uncertain at the lowest galactic mass scales. I'll present the case of the satellite galaxy Andromeda II, the least massive dwarf-dwarf merger known.

Wednesday, December 04, 2013
11:00 a.m.
Clearihue Building
Room C113