



# PHYSICS AND ASTRONOMY SPECIAL COLLOQUIUM

## Prof. Carlos Frenk

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### **“A conclusive test of the existence of cold dark matter”**

#### Abstract

"The “Lambda cold dark matter” (LCDM) cosmological model is one of the great achievements in Physics of the past thirty years. Theoretical predictions formulated in the 1980s turned out to agree remarkably well with measurements, performed decades later, of the galaxy distribution and the temperature structure of the microwave background radiation. Yet, these successes do not inform us directly about the nature of the dark matter. Indeed, there are competing (and extremely controversial) claims that the dark matter might have already been discovered, either through the annihilation of cold, or the decay of warm, dark matter particles. In astrophysics the identity of the dark matter manifests itself clearly in the properties of dwarf galaxies, such as the satellites of the Milky Way. I will discuss predictions from cosmological simulations assuming cold and warm (in the form of sterile neutrinos) dark matter and show how astronomical observations can conclusively distinguish between the two".

Tuesday, March 19, 2019

3:30 p.m.

Bob Wright Centre – Room B150