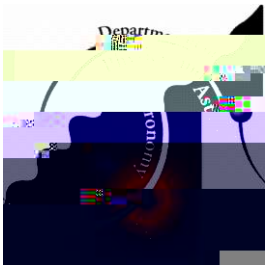

**PHYSICS AND ASTRONOMY**
**SEMINAR**

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# Dwarf galaxies and their satellites as extreme probes of LCDM

Abstract

Dwarf galaxies are extremely diverse in their morphology, from rotationally-supported star-forming disks to gas-free spheroidal stellar systems with no star-formation and negligible rotation. We use cosmological hydrodynamical simulations to show that environment plays a significant role on the assembly history, star formation and globular cluster population of dwarfs, solving a long-standing issue on the origin of dwarf ellipticals in galaxy clusters. But as observations push deeper into fainter and fainter galaxies, the theoretical predictions become more extreme. LCDM galaxy formation models make two clear predictions: i) galaxy formation should become increasingly inefficient in lower mass halos, implying that dwarfs are only able to collect a few percent of their baryonic content, and (ii) dwarfs, like any galaxy, should be surrounded by a wealth of dark-matter