Contribution ID: **141** Type: **Talk**

Dwarf Galaxies, Milky Way Satellites and Stellar Streams: A Review

Tuesday, 27 July 2010 09:00 (30 minutes)

The recent years have seen an abundance of discoveries of substructure in the haloes of the Milky Way and Andromeda galaxies. These have been driven by availability of high quality multi-band photometric data. The “missing satellite” problem has been transformed with the doubling of the number of known Milky Way dwarf galaxies in the last few years. The number density of satellite galaxies continues to rise towards low luminosities, but may flatten at or below an absolute magnitude of -5. There is now rough agreement with theories of galaxy formation in CDM cosmologies, although the detailed luminosity function eludes prediction.

There have also been discoveries of many new tidal streams from dwarf galaxies and globular clusters, including the Orphan Stream and the GD-1 stream. These can be used to delineate the size and shape of the dark matter halo of the Galaxy, the rotation curve of the Galaxy, as well as to constrain the abundance of dark matter substructure. Detailed luminosity profiles of the largest stellar stream, the Sagittarius stream, allow us to reassemble its progenitor, which is comparable to the present-day Small Magellanic Cloud in brightness and dark matter content.

Implications of the panoply of discoveries for the dark matter distribution in the Milky Way as well as direct and indirect detection experiments for dark matter will be discussed.

Primary author: Prof. EVANS, Wyn (IOA, Cambridge University)

Presenter: Prof. EVANS, Wyn (IOA, Cambridge University)

Session Classification: Plenary session : Structure Formation & N-body Simulation

Track Classification: Structure Formation & N-body simulations