



Western University
Department of Physics and Astronomy

PHYSICS & ASTRONOMY COLLOQUIUM

Date: **Thursday, 28th September 2017**
Time: **1:30 p.m.**
Location: **Physics & Astronomy Seminar Room 100**

Dr. James Wurster

Department of Physics & Astronomy
University of Exeter, U.K.

“The implications of non-ideal magnetohydrodynamics on star formation”

ABSTRACT

Until recently, numerical simulations of low-mass star formation have been unable to produce large discs around a forming protostar. This contradicts observations. With the inclusion of non-ideal magnetohydrodynamics (MHD), large discs are now being formed in numerical simulations, indicating the necessity of non-ideal MHD. If the inclusion of non-ideal MHD can self-consistently re-introduce discs, then what effect would it have on the formation of the protostar itself, or on large scales in star forming clusters?

In this talk, I will first introduce the three non-ideal MHD processes: Ohmic resistivity, ambipolar diffusion, and the Hall effect. I will then discuss their implications on disc formation, the formation and evolution of the first and second hydrostatic core, and finally on star cluster formation.

COFFEE + light snacks will be available in the Atrium, 2nd floor, at 1:15 p.m.