



SPEAKER: **Chris Tully (Princeton University (US))**

TITLE: **One Second After the Big Bang**

DATE: Tue 06/05/2014 11:00

PLACE: Main Auditorium

ABSTRACT

A new experiment called PTOLEMY (Princeton Tritium Observatory for Light, Early-Universe, Massive-Neutrino Yield) is under development at the Princeton Plasma Physics Laboratory with the goal of challenging one of the most fundamental predictions of the Big Bang – the present-day existence of relic neutrinos produced less than one second after the Big Bang. Using a gigantic graphene surface to hold 100 grams of a single-atomic layer of tritium, low noise antennas that sense the radio waves of individual electrons undergoing cyclotron motion, and a massive array of cryogenic sensors that sit at the transition between normal and superconducting states, the PTOLEMY project has the potential to challenge one of the most fundamental predictions of the Big Bang, to potentially uncover new interactions and properties of the neutrinos, and to search for the existence of a species of light dark matter known as sterile neutrinos.