千葉大学大学院理学研究科附属

ハドロン宇宙国際研究センター

International Center for Hadron Astrophysics

5月 ICEHAP Seminar

2017年5月16日（火）午後2:00～

場所：工学系総合研究棟１、 ６階、609-1号室）

講師：Donald Warren 氏

(Astrophysical Big Bang Laboratory, RIKEN)

"Thermal particles in GRB afterglows: low energy, high impact"

Abstract

The standard model for gamma-ray burst (GRB) afterglows assumes that they are produced by electrons in a power-law distribution. However, it is known from PIC simulations that this is not entirely corect.
The majority of electrons in the shocked plasma are not part of a Fermi-accelerated nonthermal distribution. Instead, they are "thermal" particles, which crossed the shock once and were swept downstream afterward. In this talk I will explain why these thermal electrons are potentially extremely important to GRB afterglows at all wavelengths, from THz radio to TeV gamma-ray. I will also highlight open questions regarding this population, which can only be answered by particle in cell simulations.

Location

Contact: 043-290-2763 [Division of Neutrino Astrophysics] 043-290-2885 [Division of Plasma Astrophysics]