



PHYSICS AND ASTRONOMY SEMINAR

Dr. Graham White

Postdoctoral Fellow, TRIUMF

“Color breaking baryogenesis”

Abstract

I will discuss a scenario that generates the observed baryon asymmetry of the Universe (BAU) through a multi-step phase transition in which $SU(3)$ color symmetry is first broken and then restored. The BAU is generated through two mechanisms: one is analogous to conventional electroweak baryogenesis; the second involves spontaneous violation of B-L conservation near the phase boundary. The contribution from the electroweak mechanism dominates, while the spontaneous violation of B-L conservation is associated with the generation of a small relic charge asymmetry that is several orders of magnitude below current observational bounds. We demonstrate this scenario with a simple model that reproduces the observed BAU. We discuss how future EDM and collider searches may probe this scenario.

Wednesday, December 13, 2017

2:00 p.m.

Human & Social Development Building

Room A270