

Addendum to Meeting Program

2015 AAPT Summer Meeting – College Park, July 25–29

Abstracts added:

The following abstracts have been added on Sunday:

SPS20: 8-10 p.m. Attack on the SUSY Off-shell Auxiliary Field Problem: Development of Algorithm for Off-shell Completion of 1D Supermultiplets using Adinkra Networks

Mathew Calkins and Delilah Gates, University of Maryland, College Park

Research Mentor: Sylvester Gates

Starting with adinkra networks—1D supermultiplets obtained from 0-branes plus field redefinitions—and the “Garden Algebra,” we have created architecture for algorithms that (starting from on-shell theories) search for off-shell completions through a well-defined computation procedure. We show in one dimension how to directly attack the notorious “off-shell auxiliary field” problem of supersymmetry with algorithms in the adinkra network-world formulation.

SPS21: 8-10 p.m. Ghost Stellar Halos in Dwarf Galaxies

Hoyoung Kang, University of Maryland, College Park

Research Mentor: Massimo Ricotti

In CDM (cold dark matter) cosmologies, galaxy assembly is hierarchical: galaxies grow by accreting smaller mass (dwarf) galaxies. The accretion of dwarf galaxies produces an extended stellar halo, with a luminosity that depends on how luminous are the accreting dwarfs and a size that depends on the number of mergers. A stellar halo is observed around the Milky Way, but not much is known about stellar halos around dwarf galaxies, also known as “ghost halos.” We carry out numerical simulations to characterize the size and surface brightness of stellar halos as a function of the mass of the galaxy. We expect that for galaxies smaller than a critical value, these ghost halos will not exist because the smaller galactic subunits that build it up, do not form any stars. Therefore, our study aims at probing what are the typical masses of the smallest and faintest galaxies that have ever formed in the universe.

SPS22: 8-10 p.m. Simulations of Liquid Scintillator Tile for the Hadron Calorimeter Upgrade

Joshua Samuel, University of Maryland, College Park

Research Mentor: Zishuo Yang

The Compact Muon Solenoid (CMS) detector at the LHC will be upgraded in preparation to the High Luminosity LHC, starting in 2025. To deal with the LHC’s radiation environment, the University of Maryland group is developing liquid-scintillator-based prototypes for the hadron calorimeter upgrade. In this project we use the GEANT Monte Carlo toolkit to simulate and study the tile prototypes. We simulate hadronic jets generating photons inside the liquid scintillator, and calculate photon-capture efficiency of the tile prototype. Based on simulation results, we point out ways to optimize photon-capture efficiency and signal uniformity of the prototypes.

PST1E17: 8:30-9:15 p.m. Enrollment Fluctuation: Effect on Qualitative In-Class Data Analysis

Charles Bertram is a coauthor for PST1E17 on Monday.

GF03: 2-2:30 p.m. Multiple Perspectives on Building a Student-centered Physics Bridge Program: Sundial at Arizona State University

Jacob Elledge is a coauthor for GF03 on Wednesday.

Abstract canceled:

The following abstract has been canceled:

PST1C11: 8:30-9:15 p.m. Physics Principles in the Bathroom

CANCELED
Poster – Russell A. Poch, Howard Community College, 10901 Little Patuxent Pkwy., Columbia, MD 21044-3197; RPOCH@howardcc.edu

Time changes:

W05: Data Analysis for Astronomy Educators

has changed time to 8–11:30 a.m.

Presider changes:

Ruth Howes will preside at Session AB, “History of Physics in Other Cultures.”