4-1-2018

INPP Seminar | Lepton-proton Bremsstrahlung in Effective Field Theory, April 17

Ohio University College of Arts & Sciences

INPP Seminar | Lepton-proton Bremsstrahlung in Effective Field Theory, April 17

April 1, 2018
Categories: Events
Tags: Institute of Nuclear and Particle Physics, NPP Seminar, physics and astronomy events, Pulak Talukdar

The Institute of Nuclear and Particle Physics (INPP) presents Pulak Talukdar, of Indian Institute of Technology Guwahati, on Lepton-proton Bremsstrahlung in Effective Field Theory, on Tuesday, April 24, at 4 p.m. in Edwards Accelerator Lab, Roger W. Finlay Conference Room.

Pulak Talukdar

Abstract: Ever since its discovery in 2010, the proton radius puzzle still continues to defy the physics community. Many new experiments have been launched to address this issue. One of these, the MUon Scattering Experiment (MUSE) at PSI, is designed to measure elastic scattering of low-energy electrons and muons off a proton target in order to extract a precise value for the proton's r.m.s. radius. One of the major obstacles in such an experiment is the fact that leptons can't be scattered without the emission of real photons (Bremsstrahlung). The emission of real photons causes a discrepancy between the detected particle momenta and their actual momenta at the scattering vertex leading to distortions in the extracted experimental spectra. In order to determine the proton charge radius precisely, the data needs to be corrected from this radiation process.

In my talk, I will present a preliminary analysis of this Bremsstralung process in an effective field theory framework.