

LABORATORY FOR ELEMENTARY-PARTICLE PHYSICS (LEPP) Theory Seminar



Matthew Reece Harvard Photon Masses in the Landscape and Dark Photon Dark Matter

In effective field theory, spin-1 particles can have two kinds of masses, Stückelberg masses or masses arising from the Higgs mechanism. In the first half of the talk I will clarify the distinction between the two types and argue that a version of the Weak Gravity Conjecture places strong constraints on Stückelberg masses. I will comment on implications for the mass of the Standard Model photon and for dark photons. In the second half of the talk I will discuss a new cosmological mechanism for populating dark photon dark matter, which operates by storing energy in an axion field that efficiently converts into dark photons.

Wednesday, Nov. 14, 2018 2:00pm 401 Physical Sciences Building

LEPP, the Cornell University Laboratory for Elementary-Particle Physics, and CHESS resources have merged and a new lab, (CLASSE), has formed. LEPP's primary source of support is the National Science Foundation. Visit us at www.lepp.cornell.edu