

Carlos Argüelles – HEP seminar January 28, 2020
MIT

Title: Interesting times for the Standard Model

Abstract: Particle physicists are living in interesting times. We are faced with the paradox of a highly predictive theory -- the Standard Model -- that is filled with patterns that are hard to explain. We are also faced with "known unknowns," like dark matter. Right now, neutrinos are the only particles exhibiting beyond Standard Model behavior, seen in the flavor transitions called neutrino oscillations, which are due to neutrino mass. This is an important clue towards a larger theory. Building on this, I am interested in what other types of flavor transitions neutrinos may have due to new particles, new forces or new symmetries. The IceCube Neutrino Observatory turns out to be an ideal site for these studies. I will discuss our latest results.