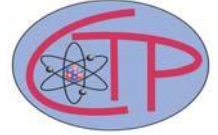




NEW YORK CITY COLLEGE OF TECHNOLOGY
Physics Department
Center for Theoretical Physics



How Big is the Proton?

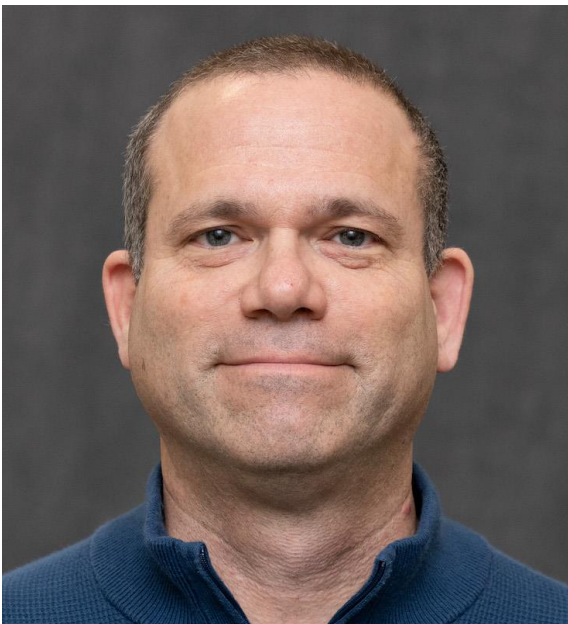
Presented by

Professor Gil Paz

Wayne State University

Thursday, November 9 at 12:00 noon

Room 801N



In 2010 the proton charge radius was extracted for the first time from muonic hydrogen, a bound state of a muon and a proton. The value obtained was five standard deviations away from the regular hydrogen extraction. Taken at face value, the discrepancy might indicate a new, unknown, force in nature coupling to muons, but not to electrons. It also forced us to reexamine our understanding of the structure of the proton.

This "proton radius puzzle" can be viewed as the latest chapter in a 100+ year old adventure: How spectroscopy keeps pushing the boundaries of science. I will briefly review this history and describe a research effort that seeks to answer the simple question: How Big is the Proton?