



The Proton Remains Puzzling



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研究领域： nucleon structure, the search for QCD exotic states, fundamental symmetry studies at low energy, and the development of polarized gas targets

讲座信息

讲座时间： 2020/5/28 9:00-11:00

讲座地点： 北大理论所（Zoom网络会议）

会议链接： <https://zoom.us/j/4609116685?pwd=M3FXRVBjd3FuR0svbFJWM2kwYk1WZz09>
Meeting ID: 460 911 6685
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会议摘要

Nucleons (protons and neutrons) are the building blocks of atomic nuclei, and are responsible for more than 99% of the visible matter in the universe. Despite decades of efforts in studying its internal structure, there are still a number of puzzles surrounding the proton such as its spin, mass, and charge radius. The proton charge radius puzzle developed about ten years ago refers to a 5-7 sigma discrepancy between the ultrahigh precise values of the proton charge radius determined from muonic hydrogen Lamb shift measurements and the CODATA values compiled from electron-proton scattering experiments and hydrogen spectroscopy measurements. In this talk I will briefly introduce the proton spin and mass puzzles first. I will then focus on the proton charge radius puzzle, the latest experimental results, and especially the PRad experiment at Jefferson Lab and its result.

教授简介

HAIYAN GAO is the Henry Newson Professor of Physics at Duke University. She received her B.S. in physics from Tsinghua University in 1988 and her Ph.D. in Physics from the California Institute of Technology in 1994. She was a postdoctoral research associate at the University of Illinois, Urbana-Champaign from 1994 to 1996 prior to joining the Argonne National Laboratory as an Assistant Physicist. She was on the faculty at MIT from 1997-2002 before she joined the physics faculty at Duke in 2002 and became a full professor in 2008. She was named the Henry Newson Professor of Physics in 2012 at Duke. She has published many papers in top journals including Nature and Science and has given numerous invited talks internationally. She was the Chair of the Physics Department from 2011 to 2014 at Duke University, and served as the founding Vice Chancellor for Academic Affairs at Duke Kunshan University from Jan 2015-June 2019. She is a fellow of the American Physical Society (APS). She chaired and co-chaired many workshops and conferences and has served on many committees, advisory panels and a number of editorial boards of physics journals.