

Title:

The US Electron Ion Collider and Lattice QCD: Physics Opportunities and Experimental Challenges

Abhay Deshpande

Center for Frontiers in Nuclear Science (CFNS)

Stony Brook University & Brookhaven National Laboratory

Abstract:

The US electron ion collider (EIC) was established firmly as a project in the Office Of Science in January 2020. The EIC will be built at Brookhaven National Laboratory (BNL) jointly by BNL and Jefferson Lab working as partners. An EIC Project has been setup and is making progress fast. The EIC Users Group is evolving in to proto-collaborations which are expecting to submit preliminary detector design proposals by December 2021 for evaluation. The detector construction will start in ~2024/25 and progress along with the machine, so as to have at least one detector ready when the machine starts providing the 1st beams ~2030. New ideas for measurements at the EIC are continually making the EIC's science scope broader and stronger. In this talk I will present an overview of the EIC project, potential measurements with emphasis on precision and control, that could be of high interest to the Lattice QCD community.