

“Status of the Electron-Ion Collider”

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Our understanding of the theory of strong interaction, quantum chromo-dynamics (QCD), has advanced enormously in the past decades. Both experimentally and theoretically, perturbative regime in QCD has been explored and understood at precision. At the same time, lattice QCD calculations have begun to yield many quantitative results on properties of hadrons. The experimental understanding of how nucleons and nuclei are formed from their constituent quarks and gluons and their interactions, has also made progress via new experiments and theoretical frameworks such as GPDs and TMDs. However, it has been clear for some time that a new experimental facility is needed in order to quantify the role of quantum fluctuations and gluons in nuclear physics and to bring the understanding of nucleon and nuclear structure and dynamics to a new level. The Electron-Ion Collider (EIC) being proposed in the US and selected as the Nuclear Physics facility being proposed in the US and selected as the Nuclear Physics facility with highest priority for new construction in the US is such a facility. I will discuss the physics to be explored at EIC and how they set the parameters of EIC and its detectors. I will also outline the current status of the EIC project.

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