

ОБЩЕИНСТИТУТСКИЙ СЕМИНАР

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Online via Zoom at 16:00

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QCD Research at the U.S. Electron-Ion Collider

The Electron Ion Collider (EIC) is a new experimental complex, that is currently being built at Brookhaven National Lab in the U.S. with first operations planned for 2031. The EIC will collide intense, high-energy, polarized beam of electrons and hadrons at center-of-mass energy of 40 – 120 GeV to study the fundamental structure of subatomic matter. For example, the EIC will advance our understanding of the dynamical generation of hadron mass and spin from quark-gluon interactions in QCD, the three-dimensional structure of nucleons and nuclei, and the emergent properties of dense systems of gluons and more.

The EIC development and construction is a new international project on the first stages of its realization. It provides both new opportunities for the precise research of nuclei and proton, as well as the development of new accelerator and detector technologies using techniques from big data analysis and using pioneer ML and AI features. The project is actively developing and has a wide international support and recognition.

This talk will present an overview of the EIC, its physics program, and the proposed ECCE detector.

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