

Overview of the Electron Ion Collider physics program

Wednesday, July 29, 2020 4:25 PM (30 minutes)

The electron-ion collider, EIC, has been identified as the top priority new construction project in the latest NSAC long range plan in the US and is very favorably reviewed by the National Academy of sciences. Recently, it received critical decision 0 (mission need) status by the DOE and Brookhaven National Lab was chosen as the site to host the EIC. The EIC will collide intense beams of spin-polarized electrons with intense beams of both polarized nucleons and unpolarized nuclei from deuterium to uranium at various center of mass energies from 5-18 GeV for electrons and 41-275 (110) GeV for protons (nuclei).

With these properties, the three-dimensional spatial and momentum structure of the nucleon can be studied in detail and the role of gluons and sea quarks to the spin of the proton can be answered. The EIC can address the long-standing question of how 99% of the visible mass of the universe emerges from the strong interaction. In the nuclear environment nonlinear dynamics at high gluon densities can be probed as well as the hadronization in nuclear matter and in the vacuum.

In this talk an overview over the EIC, its physics goals and status of accelerator and detector considerations will be given.

I read the instructions

Secondary track (number)

Primary authors: SEIDL, Ralf (RIKEN); JOOSTEN, Sylvester (Argonne National Laboratory)

Presenter: JOOSTEN, Sylvester (Argonne National Laboratory)

Session Classification: Strong Interactions and Hadron Physics

Track Classification: 06. Strong Interactions and Hadron Physics