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The Electron Ion Collider –The Quest to Make Sense of QCD

Friday, 17 February 2023 10:45 (15 minutes)

Many important questions in Quantum Chromodynamics (QCD) remain unanswered, despite decades of investigation. For example, we cannot adequately explain how the fundamental properties (mass, spin) of objects such as the proton and neutron emerge from their constituent quarks and gluons. Interactions and structure in nuclear matter are intricately connected, the observed properties of composite objects emerge from this complex system. To attempt to understand these complex, dynamic systems requires a facility with a unique set of capabilities, the upcoming Electron-Ion Collider (EIC). The EIC is the only new accelerator facility scheduled to be built anywhere in the world in the coming decade. In this talk, I will outline the unique features of this facility and the fundamental questions that it seeks to answer, with a focus on Canadian contributions to this upcoming facility.

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