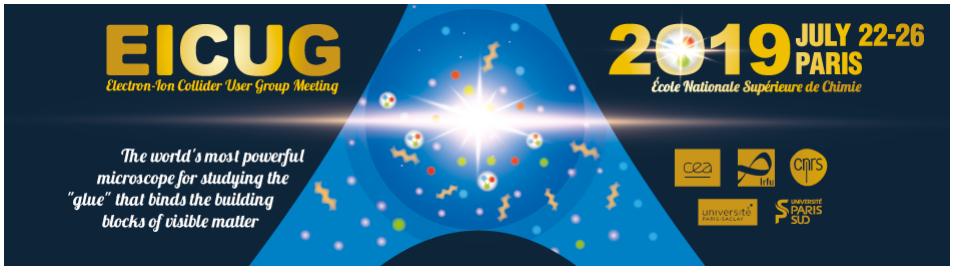

ID de Contribution: **86** Type: **Poster**

Beam-beam Interaction Simulation Study for eRHIC

lundi 22 juillet 2019 18:15 (15 minutes)

The 2015 Nuclear Science Advisory Committee Long Rang Plan identified the need for an electron-ion collider (EIC) facility as a gluon microscope with capabilities beyond those of any existing accelerator complex. To reach the required high energy, high luminosity, and high polarization, the eRHIC design, based on the existing heavy ion and polarized proton collider RHIC, adopts a very small beam sizes at the interaction points, a high collision repetition rate, and a novel hadron cooling scheme. A full crossing angle of 25 mrad and crab cavities for both electron and proton rings are required. In this poster, we will review the beam-beam interaction related eRHIC design parameters, and compare them with the previous and existing colliders. Then we present our numeric simulation results for eRHIC beam-beam interaction. In the end we present the simulation challenges for eRHIC beam-beam interaction study, and our methods to address them.

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Classification de Session: Poster session

Classification de thématique: Accelerator R&D