The Glue That Binds Us

Probing Gluonic Matter With the World's First Electron-Ion Collider

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The 2015 Long Range Plan for Nuclear Science in the US recommends a high-energy, high-luminosity polarized Electron-Ion Collider (EIC) as the highest priority for new facility construction. The EIC will, for the first time, precisely image gluons in nucleons and nuclei. It will reveal the origin of the nucleon spin and will explore a new quantum chromodynamics (QCD) frontier of ultra-dense gluon fields, with the potential to discover a new form of gluon matter predicted to be common to all nuclei. This science will be made possible by the EIC's unique capabilities for collisions of polarized electrons with polarized protons, polarized light ions, and heavy nuclei at high luminosity.

In my talk I will give an overview of the physics motivation and program of an EIC with a focus on the opportunities for small-x physics in e+A collisions.