**EIC**

The Electron-Ion Collider (EIC) is a planned accelerator facility to be built at Brookhaven National Laboratory [cite BNL] in the place of today's Relativistic Heavy Ion Collider (known as RHIC). Contrary to RHIC, which was built as an ion-ion collider, EIC will open new possibilities of probing the structure of nucleons by colliding the comparably "simple-structured" electrons with the more complicated ions. Its versatile design will allow the usage of a wide range of these ions – from protons (hydrogen ions) up to uranium nuclei [cite Silvia DIS].

\section{From RHIC to EIC}

For more than twenty years, RHIC has been instrumental for nuclear and particle physics. When it was commissioned in the year 2000, it became the first heavy ion collider capable of "smashing together" ions beyond the mass of a proton. These collisions, and the high energies at which they happened, allowed it to mimic the hot and dense conditions of the early universe. RHIC was also the first collider to utilize a spin-polarized beam of protons. The legacy of inovation will continue with the EIC, now also with the polarisation of the electron beam. [cite RHIC-facts]

The legacy of RHIC will go on in the infrastructure, which will be partially reused for the EIC. Apart from the tunnels, the whole Yellow Ring of RHIC will be repurposed as the Hadron Storage Ring, with a small part of the Blue Ring used for a 41 GeV bypass. [cite Nagaitsev].

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luminosity, when?

energies

motivation only in short

\section{Comparison to HERA}