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The Electron-Ion Collider Yellow Report

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The Electron-Ion Collider (EIC) is a new, innovative, large-scale particle accelerator to be built at Brookhaven National Lab in the USA over the next 10 years. It will collide beams of polarized electrons with polarized beams of light ions, or with heavy ions, at high luminosity. The goal is to study the fundamental structure of nucleons and nuclei, and the theory of Quantum Chromodynamics that describes their interactions.

The ElC Users Group (EICUG) has recently undertaken a major effort to quantify the requirements of the future EIC detectors so that they can deliver the best possible science. A tremendous amount of work has gone into this project which included a large fraction of the community over the year 2020. It has culminated in the release of a Yellow Report summarizing all the findings.

During this presentation we will outline the contents of the Physics Volume of the EIC Yellow Report and highlight some key measurements that drive the most stringent detector requirements.

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