

Computing at the Electron-Ion Collider

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The Electron-Ion Collider (EIC) is envisioned as the next-generation U.S. facility to study quarks and gluons in strongly interacting matter. Developing the physics program for the EIC, and designing the detectors needed to realize it, requires a plethora of software tools and multifaceted analysis efforts. Many of these tools have yet to be developed or need to be expanded and tuned for the physics reach of the EIC. Currently, various groups use disparate sets of software tools to achieve the same or similar analysis tasks such as Monte Carlo event generation, detector simulations, track reconstruction, event visualization, and data storage to name a few examples. With a long-range goal of the successful execution of the EIC scientific program in mind, it is clear that early investment in the development of well-defined interfaces for communicating, sharing, and collaborating, will facilitate a timely completion of not just the planning and design of an EIC but ultimate delivery the physics capable with an EIC. In this presentation, we give an outline of forward-looking global objectives that we think will help sustain a software community for more than a decade. We then identify the high-priority projects for immediate development and also those, which will ensure an open-source development environment for the future.

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