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Lepton beam facilities at the intensity frontier

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Lepton beam facilities at intensity frontiers open new opportunities for precision and BSM physics. Jefferson Lab currently hosts the CEBAF accelerator which delivers a 12 GeV high power electron beam (up to 1 MW) to run in parallel up to four fixed target experiments. The comprehensive physics program includes: nucleon and nuclear structure, hadron spectroscopy and physics beyond the SM. While the future Electron Ion Collider is being built at Brookhaven National Lab, JLab is considering an upgrade in intensity (up 2.5 MW) and energy (up to 24 GeV). The upgraded machine will be able to extend the current electron-scattering program to unexplored kinematical regions and add new capabilities including a polarized positron beam and high intensity secondary muon and neutrino beams. In this contribution I will give an overview of the physics opportunities, the status of the proposal, and plans for accelerator and detectors upgrades.

Collaboration

JLAB12

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