## **Quark Matter 2012**



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## The Large Hadron-electron Collider at CERN

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The project of a new experimental facility at CERN, the Large Hadron-electron Collider, which will collide electrons against the LHC beams at center-of-mass energies around 1 TeV per nucleon, will be presented. After a brief introduction and showing the proposals for accelerator and detector, the physics opportunities for QCD studies will be discussed. Specifically, I will focus on the possibilities with heavy ions, for improving our knowledge on the parton densities, small-x dynamics and particle production mechanism through inclusive, diffractive and exclusive measurements, plus final state studies.

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