

## The LHeC: Precision sub-attometric Science

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The achievement of colliding hadron beams with multi-TeV energy/unit charge at the LHC is already exposing the nature of physics in quark-quark, quark-gluon and gluon-gluon interactions at the “Terascale”. The Standard Model (SM) is the gauge with which we identify and establish observation of physics at the smallest distances. Its precise quantification remains therefore pivotal to discovery, to interpretation, and to the understanding of physics at the Terascale. With this perspective, the opportunity for a programme of lepton-quark physics at a new, sub-attometric, scale using one of the LHC hadron beams in collision with either an electron or a positron beam, the Large Hadron Electron Collider (LHeC), is presented. Aspects of the physics potential, the status of the conceptual design of an LHeC experiment, and the nature of the additions to the LHC which the LHeC will entail, are presented.

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