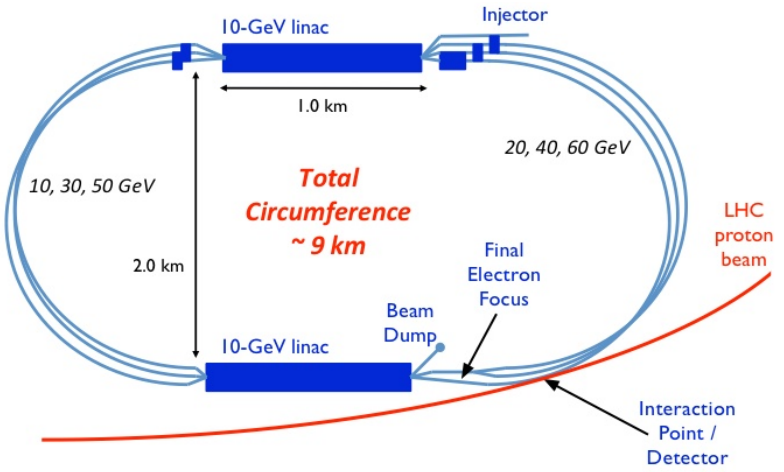
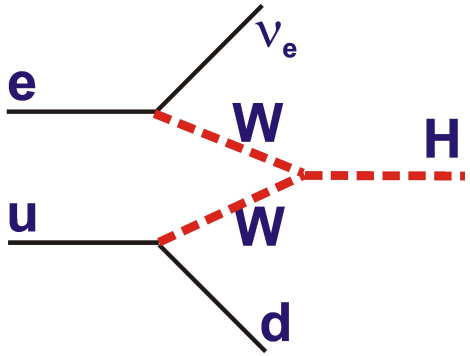
ep (and eA) Scattering, PRN, 8/9/16

H1: No further direct involvement



LHeC:

- CDR was published in 2012.
- Contributions from PRN, PPA, JB
- PRN continues to convene Low x Physics Working Group and to serve on Coordination Group
- Currently most active areas



1) Energy Recovery Linac + 802 MHz SC RF cavity development (CERN, Jlab … → 400 MeV demonstrator at Orsay)

2) Evaluation of potential for Higgs physics and impact on LHC via high x PDFs at 10^{34} cm^{-2} s^{-1} luminosity

3) Longer term perspective of FCC-eh

→ Building a case for CERN Council Euro Strategy exercise 2019

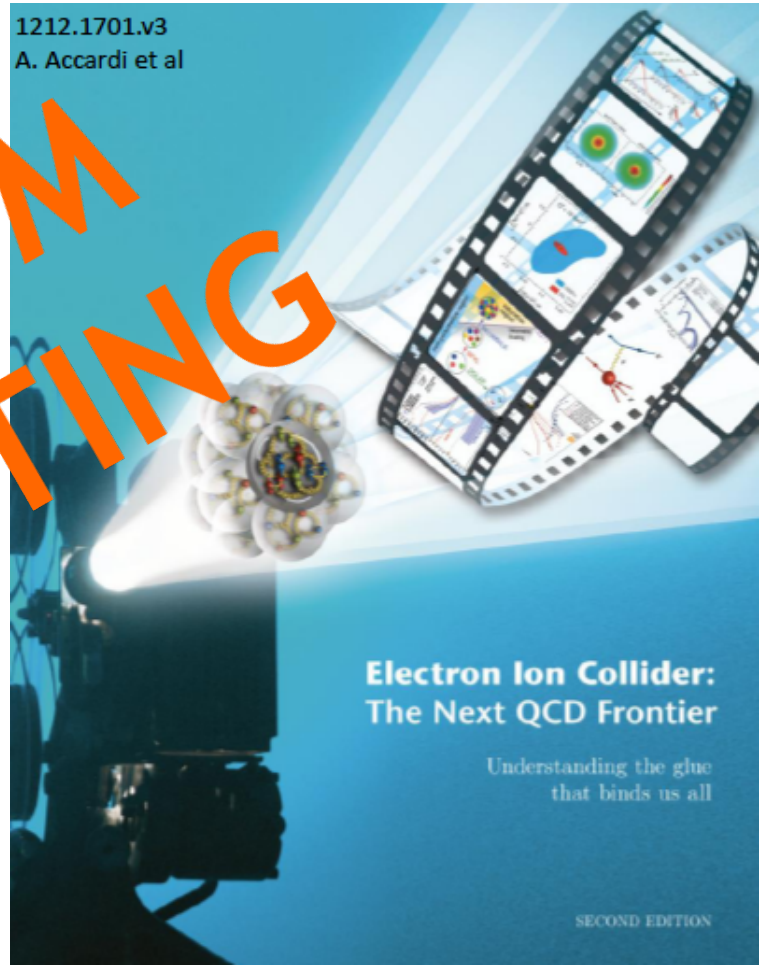
US Electron-Ion Collider

Also – US Electron Ion Collider Project (Brookhaven / Jefferson).

… Lower energy, but would be world's first eA collider and polarised protons
→ nucleon spin / transverse structure

Some overlapping interest with LHeC

Highest priority project in US Nuclear Physics Long Range Plan … construction start not before 2020



SLIDE FROM 2015 MEETING

Significant interest among UK nuclear Community (Peter Jones @ Birmingham). PRN in close contact.

May offer opportunities for Silicon Detector deployment

US Electron-Ion Collider

- MAPS R&D project received small-scale funding from US DoE

Precision Central Silicon Tracking & Vertexing for the EIC

Peter Jones, Laura Gonella, Paul Newman, Phil Allport

- PRN involved at low level in High x PDF sensitivity studies

- Larger scale ERC grant application “Future-Glue” aiming to understand gluonic Structure of matter through Diffraction → simulations, Phenomenology and Roman Pot R&D.

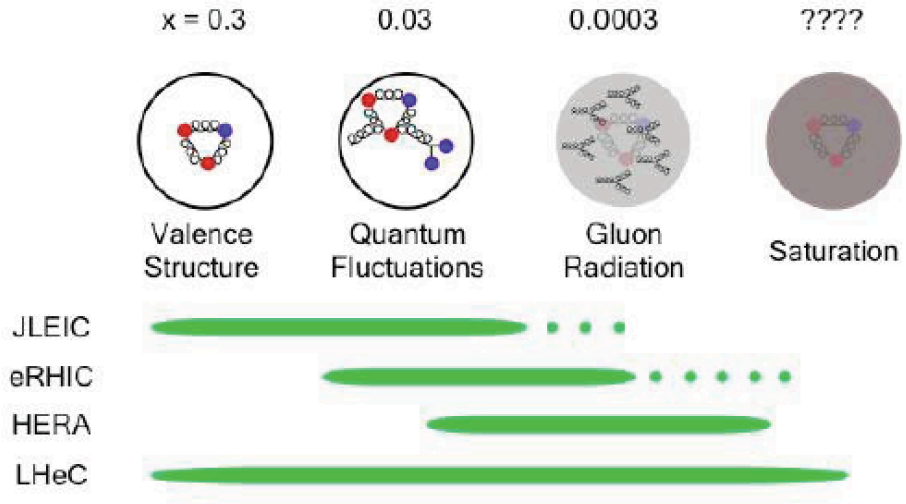


Figure 2: Schematic illustration of the different regions of gluonic structure for the case of the proton.

... Bham PP, NP and BILPA well placed if project goes ahead