

PH3520 / Particle Physics

Autumn term 2011 – week 8



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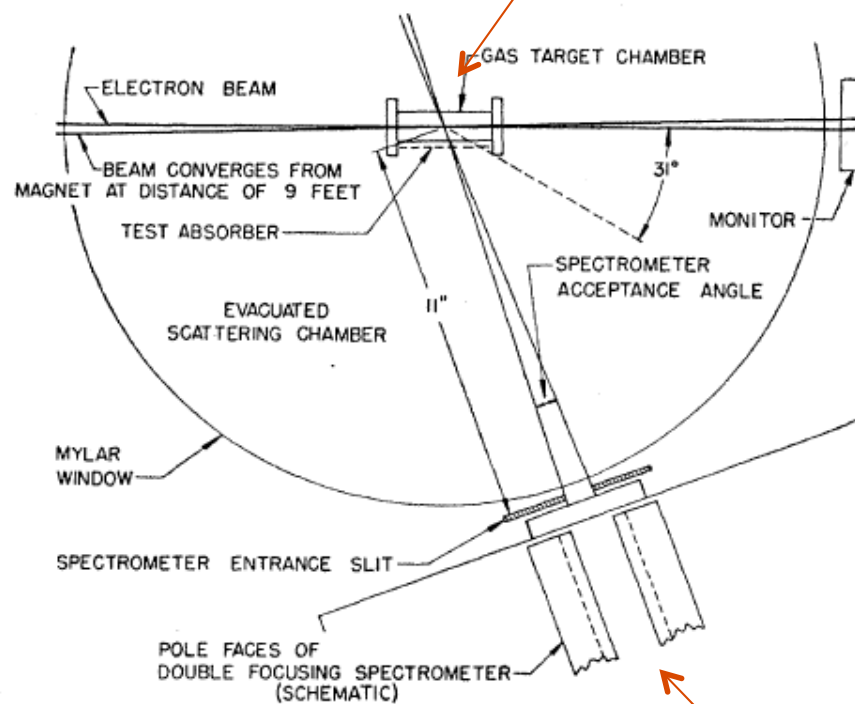
Elastic ep scattering: the size of the proton

McAllister and Hofstadter, Phys. Rev. 102 (1956) 851.

Incident e^-
 $E = 188 \text{ MeV}$

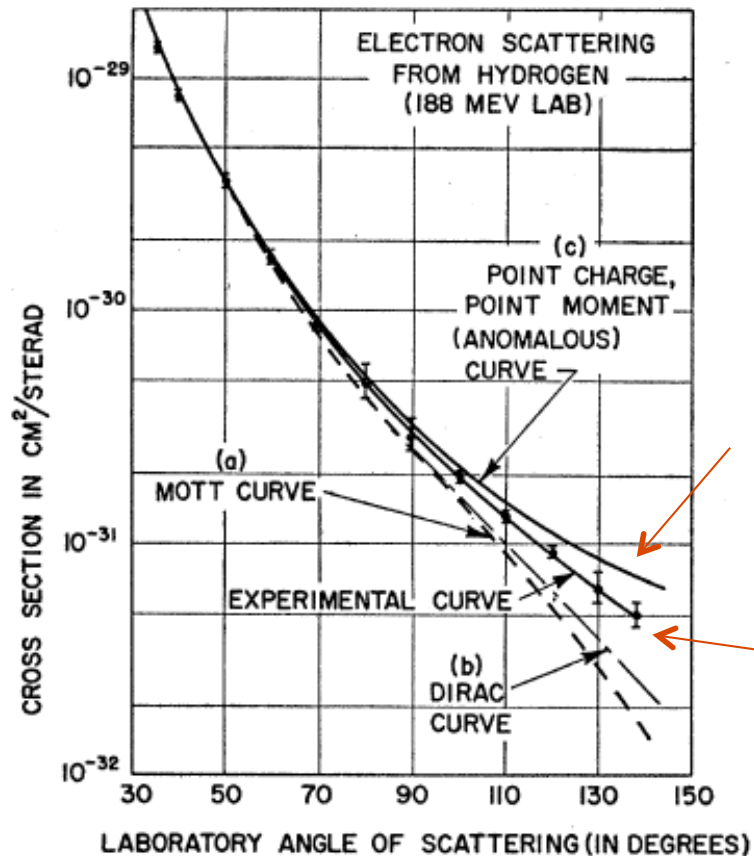


Hydrogen target



Detect e^- in $\Delta\Omega(\theta)$

Elastic ep scattering: the size of the proton



Expected for point-like proton

Measured data (points)

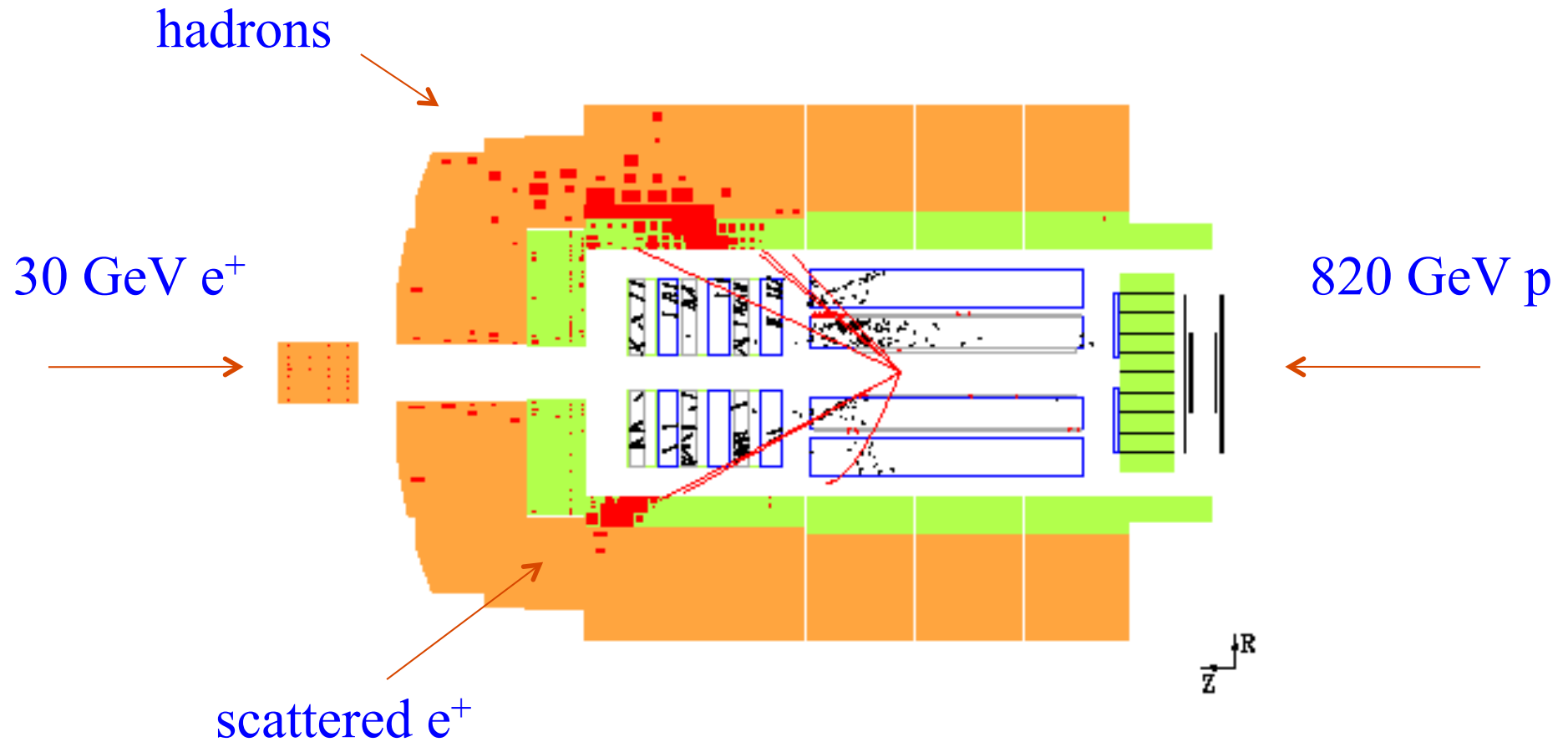
Deep inelastic ep scattering: the HERA ep collider

H1



Zeus

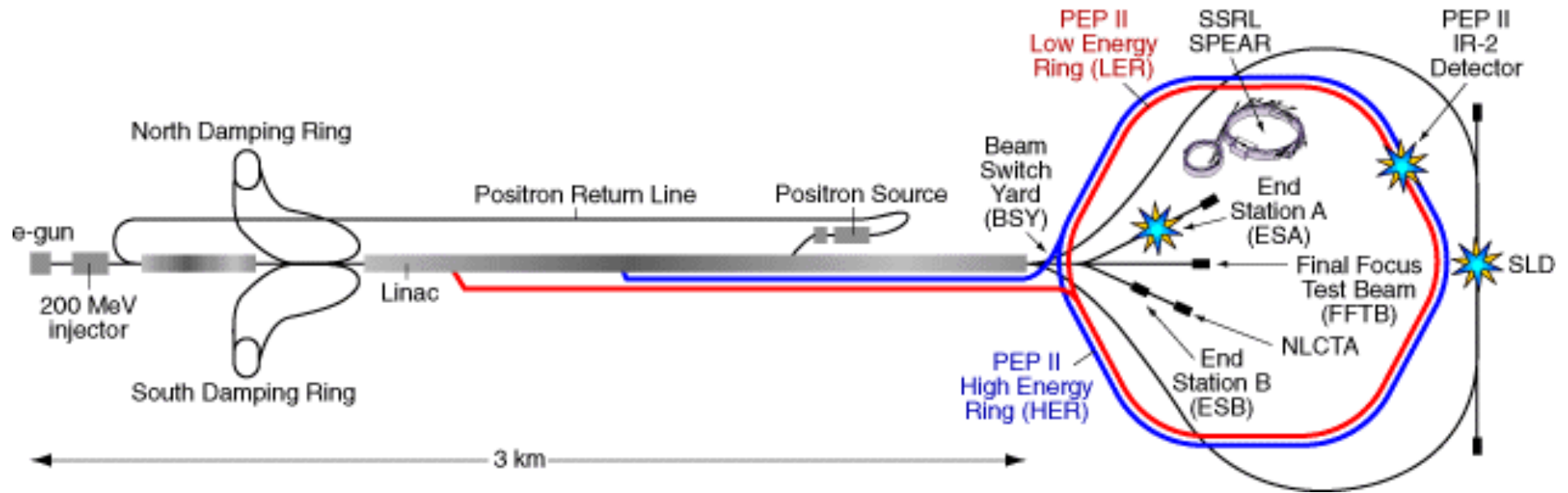
Deep inelastic ep scattering: a high- Q^2 event in the H1 detector



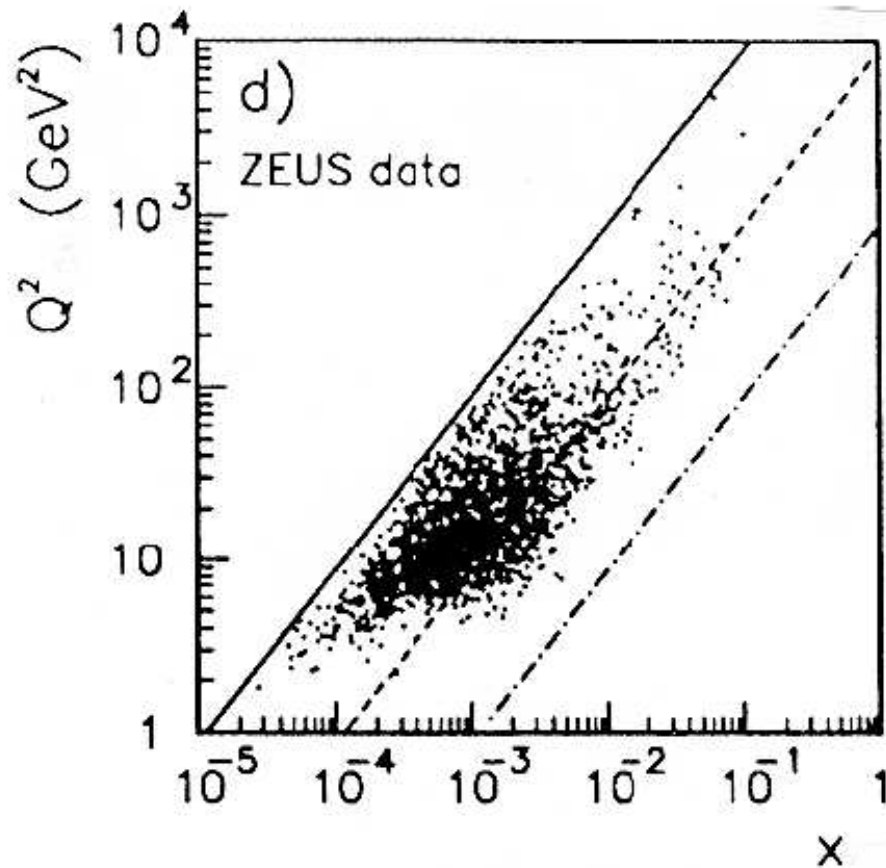


SLAC

The Stanford Linear Accelerator Center



Deep inelastic ep scattering: the structure of the proton



John F. Martin, *Report from the ZEUS Collaboration at HERA*, in Peris Drell and David Rubin (eds.), *Proceedings of the XVI International Symposium on Lepton and Photon Interactions*, AIP, New York, 1994.

Parton Density Functions

