

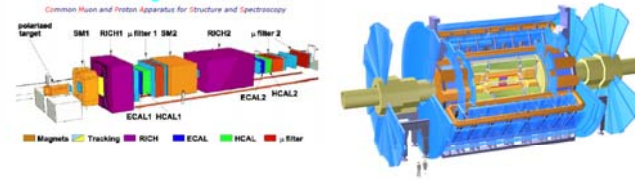
Outline

- Relativistic Kinematics
 - (4-momentum)² invariance, invariant mass
 - Hypothesis testing, production thresholds
 - Cross sections, flux and luminosity
 - Particle lifetime, decay length, width
- Classification of particles
 - Fermions and bosons
 - Leptons, hadrons, quarks
 - Mesons, baryons
- Quark Model
 - Meson and baryon multiplets
 - Isospin, strangeness, c, b, t quarks
- Particle Interactions
 - Virtual particles and range of forces
 - Strong and weak decays, conservation rules
 - Parity, charge conjugation, CP
 - Weak decays of quarks
 - Colour charge, QCD, gluons
 - Charmonium and upsilon systems
- Electroweak Interactions
 - Charged and neutral currents
 - W, Z, LEP experiments
 - Higgs and the future
- LHC Experiments
- Future - introduction to accelerator physics

Fixed target vs. collider

COMPASS experiment

ATLAS experiment



"Energy Frontier" Accelerators

