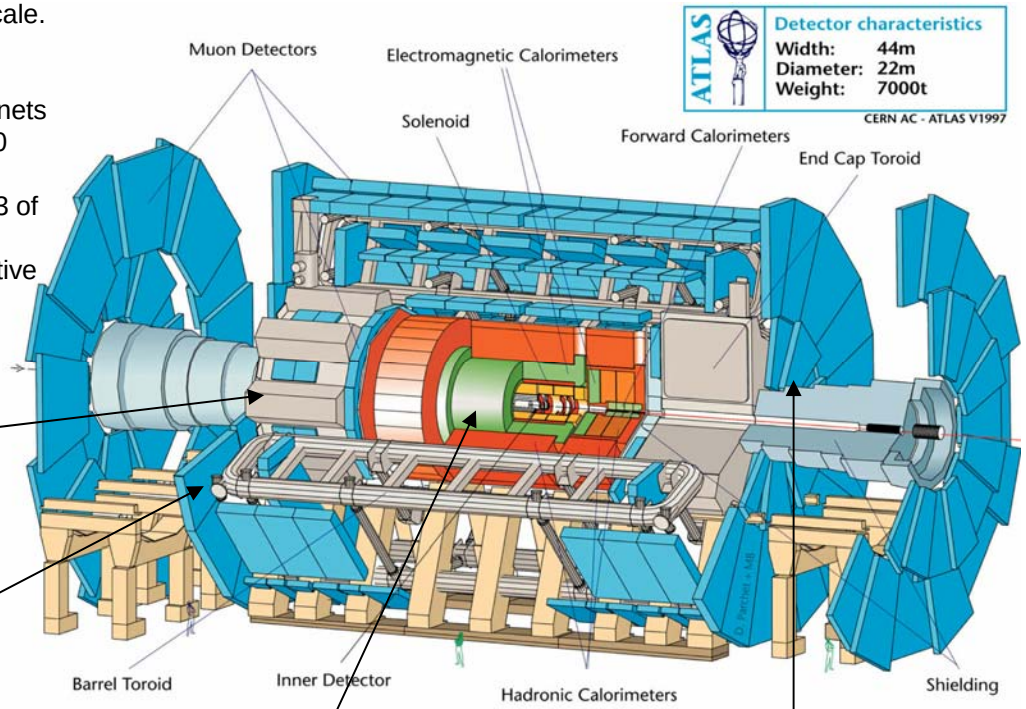
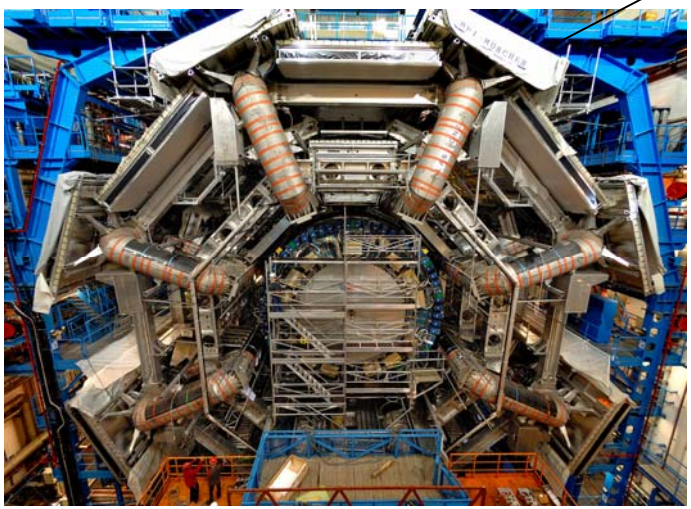
# Visit of the ATLAS Detector Experiment and Cryogenics (1)

ATLAS is a LHC experiment applying cryogenics at large scale. The superconducting magnet system with cold mass of 600 tons consists of a barrel toroid 25 m in length and 20 m in diameter formed by eight race-track coils, two end cap magnets and a central solenoid. Two refrigerators (6 kW @ 4.5 K , 20 kW @ 40-80 K) are used for its cooling. Three liquid argon calorimeters with cold mass of 600 tons are filled with 84 m3 of liquid argon and cooled with a dedicated 20 kW @ 80 K refrigerator. Proximity cryogenic systems supply the respective coolants to magnets and calorimters.

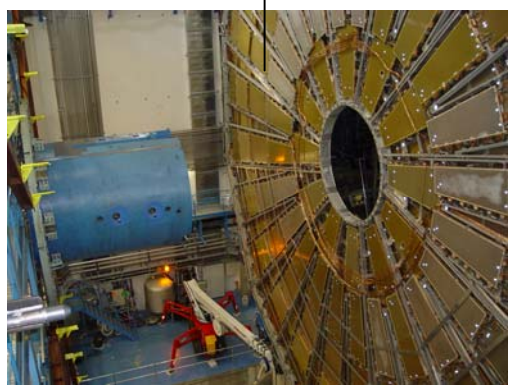



End cap magnet during assembly phase



Front view of the eight coils forming the barrel toroid magnet. In the centre one of the liquid argon calorimeters

Liquid argon Barrel calorimeter during lowering into the experimental cavern

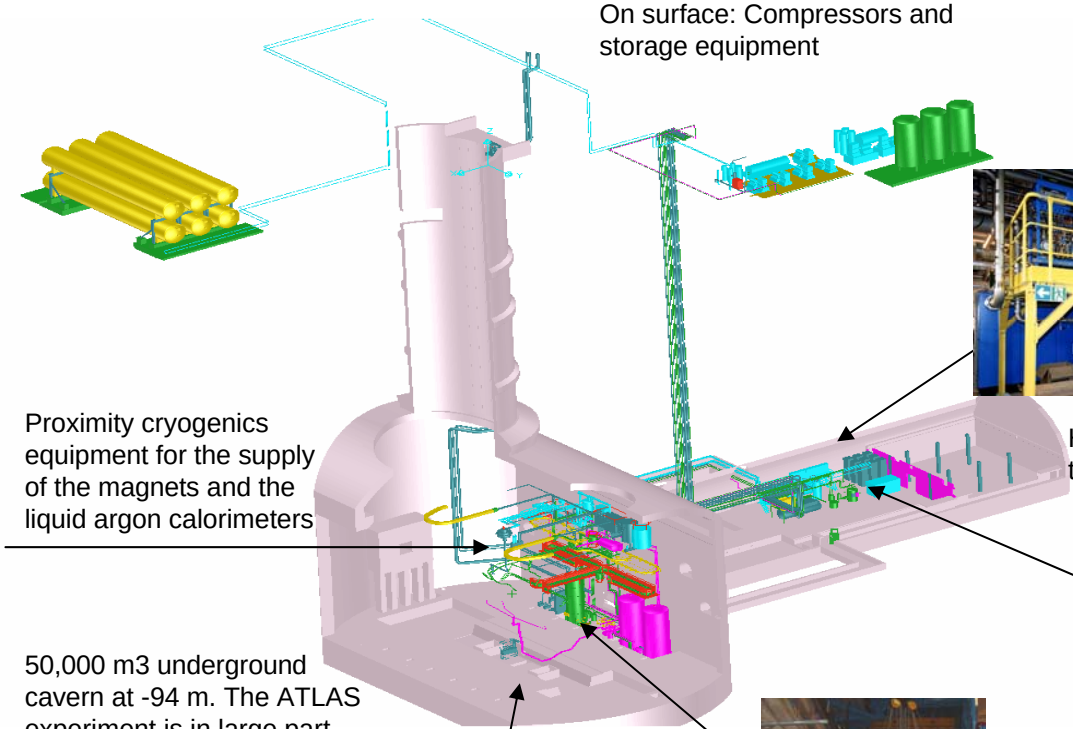


Muon detector « Big Wheel »

# Visit of the ATLAS Detector Experiment and Cryogenics (2)

Proximity cryogenics equipment for the magnets and the liquid argon calorimeters

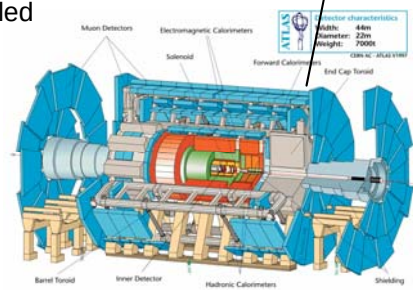
On surface: Compressors and storage equipment



Proximity cryogenics equipment for the supply of the magnets and the liquid argon calorimeters

He refrigerators in technical side cavern

50,000 m3 underground cavern at -94 m. The ATLAS experiment is in large part already installed



ATLAS experiment

Liquid nitrogen phase seperator

Liquid nitrogen refrigerator