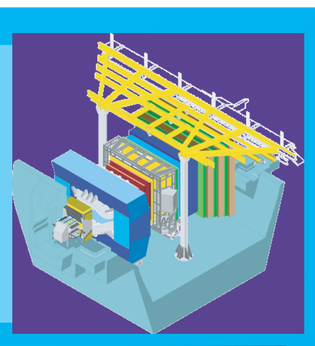
Beam Pipe (example)



Fine pitched silicon strip sensors are placed as close as possible to the LHC beam with a minimum amount of material between. The sensors are housed in secondary vacuum boxes which are retracted from the beam during LHC injection.

Vacuum Vessel

Secondaryvacuum box

Photo

Exit window

Vacuumfeedthroughs

One detector half

Photo

Sensors

21 Phi + 23 R-sensors
= 0.25m2 Si

RF foil

Photo

Prototypes of the readout board

Photo

16-chip BEETLE hybrid with sensor prototype

The VELO allows precise primary and secondary vertex reconstruction. It is the main tracking device before the magnet and its data are heavily used in the L1-trigger. The readout is analog using 40m copper cables. Zero suppression and cluster finding happens on L1 boards behind the radiation shield. The L1 board contain links to the L1-trigger and the DAQ system.

Holding a mirror to physics