



Istituto Nazionale di Fisica Nucleare

WG11 detector design meeting
CERN, 30/01/18

Status of the Preshower and Muon sections of the CDR

P. Giacomelli

INFN Bologna

- A first, still very raw, version of the preshower section of the IDEA concept is now available in Overleaf.
- Preshower is now placed immediately after the solenoid.
- An extra layer of converting material (tungsten, lead?) is possibly foreseen
- Important is the precise knowledge (few μm) of the position of the edges of the detector
 - This can only be achieved with silicon sensors
 - Size of the detector is about 100 m²
 - Two disks of silicon sensors at the edges of the preshower
 - Other disks of the preshower realised with MPGDs, suggested to use μRWell

Muon section

- A first, still very raw, version of the muon system section of the IDEA concept is also available in Overleaf.
- Muon system placed in the iron return yoke of the magnetic field
- 3 layers of μ RWell detectors foreseen
 - Lever arm of a few meters between first and last muon station
 - Position resolution of $\sim 200 \mu\text{m}$, should translate into a $\sigma(p_T)/p_T^2$ resolution of about $2 \times 10^{-5} \text{ GeV}^{-1}$
 - Muon stubs can be connected to central tracker tracks
 - Muon trigger can be provided

Muon stations

In the IDEA detector concept, a muon detection system, made of three μ RWell stations interleaved in the iron return yoke, is foreseen.

