

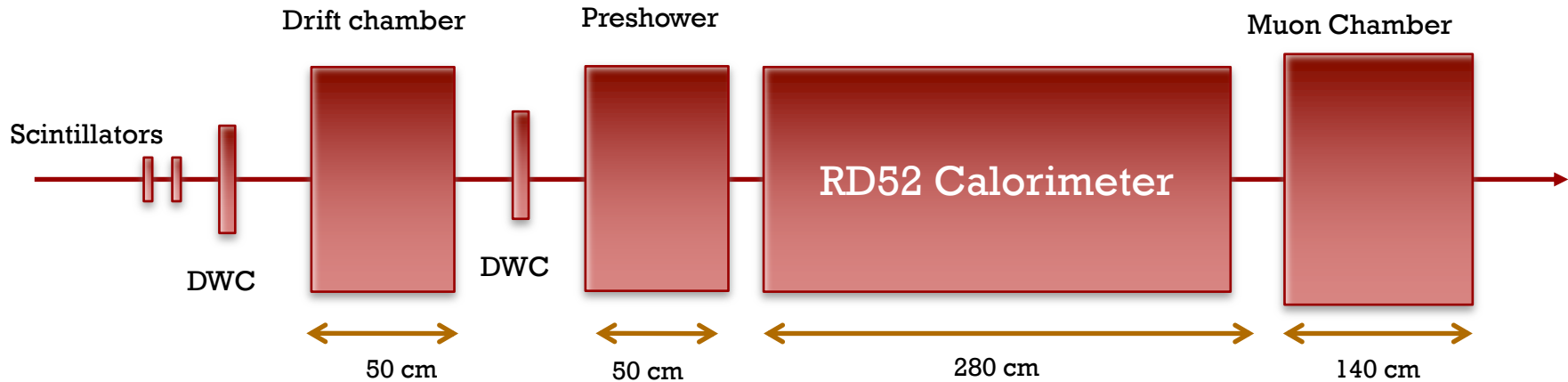


IDEA: The vertical slice Test Beam



R. Santoro

Setup schema



- Trigger with 2 scintillators in coincidence + 1 veto (if needed)
- 2 DWC (Delayed Wire Chamber)
- CEDAR (Differential Cherenkov detector)
- Drift Chamber Prototype
- Preshower with GEM: 2 layers GEM + absorber ($0 - 2 X_0$)
- Different Dual Readout prototypes
 - RD52 calorimeter with PMT readout
 - RD52 calorimeter with staggered fibers
 - Small calorimeter module with SiPM readout
- Muon chamber: 1 layer GEM + 2 layers μ RWell
 - The large scintillator usually used in the RD52 test beam will be also readout

Some general information

- **Access to the Area since August the 29th**
 - Free access with beam dumped upstream (beam dump before PPE168)
- **1st safety inspection: September the 3rd**
 - As many detectors as possible have to be installed for the inspection
- **2nd safety inspection: September the 5th at 12:00**
- **Alignment service: September the 5th at 14:00**
- **Beam on: September the 5th at 18:00**
- **Beam stop: September the 12th at 8:00**
- **No machine development between us and the next users**
- **Daily meeting starting from August the 29th:**
 - At least one expert for each sub-system has to attend the meeting to give feedback on the activities and plans
 - At least one expert for each sub-system has to be on-call when the sub-system is running

Systems installation

- Services installation (Silvia - talk)
- Detector installation and qualification (from Aug - 29th to Sept. – 2nd)
 - Drift chamber (at latest on Aug the 31st)
 - Muon chamber + Preshower (still under discussion)
 - Calorimetric module with staggered fibres (Sept the 3rd)
 - Calorimetric module with SiPM read-out (Sept the 3rd)
 - plug and play system
 - Central Daq, On-line and trigger setting up (Aug the 29th)
- System integration (from Sept – 3rd to Sept – 5th)
 - Detector commissioning
 - Test runs
- Beam on (Sept - 5th)

A preliminary plan: phase I

Calibration (\approx 1.5 days):

- 60 GeV electrons beam
 - RD52 calorimeter: calibration runs
 - All towers (4) in each module (9) has to be calibrated with the preshower in
 - The towers will be moved along the beam line by remote controlled motors
 - Drift Chamber calibration runs
 - HV scan
 - Angle scan: 2 – 3 angles (access to the area is needed to change the angle)
 - Muon chamber and Preshower
 - no calibration needed

A preliminary plan: phase II

Vertical slice test (\approx 2.5 days)

- Energy Scan with electrons beams (6 – 60 GeV)
 - Drift Chamber
 - Tracking performance
 - RD52 Calorimeter
 - Performance study with different absorbers ($0 - 2 X_0$)
 - Performance study with the absorbers at different distances

- Energy Scan with hadron beams (Lower energy available* – 60 GeV)
 - Drift Chamber
 - π/k separation (10k of π and 10k of kaons requested at each energy)
 - CEDAR information needed (available off-line)
 - RD52 Calorimeter
 - Performance with hadrons

- μ beam for RD52 calorimeter

- Test in a multi-particle environment (target): under discussion

* **Hadron beam with lower energy is expected to be at 15 – 20 GeV**

A preliminary plan: phase III

Test with calorimeter prototype modules (2 days)

at this stage we should consider to run only with the detectors required for the specific test and, eventually, the others operated in parasitic mode

- **Prototype readout by SiPM (0.5 day)**
 - Energy Scan with electrons beams (6 – 60 GeV)
 - Ph-e / Gev measurement
 - After the scan, the module will be moved to the counting room to be prepared for the Cross-talk measurement

- **Prototype with staggered fibres readout by PMTs (1 day)**
 - Calibration
 - Electron beam (1 or 2 energies ?) to calibrate the long fibres
 - π beams (1 or 2 energies ?) to cross-calibrate the short fibres
 - Energy scan with electrons and pions
 - Performance studies

- **Prototype readout by SiPM (0.5 day)**
 - Energy Scan with electrons beams (6 – 60 GeV)
 - Cross-talk measurement