ECCE Calo WG reports

Timeline

June 14th

- Internal goal for ECCE detector baseline configuration with very limited list of appropriate alternatives and upgrade options

June 15th

- Large simulation starts with few selected detector configurations

Overview of detector

- Also, see Friederike's talk in the first WG meeting [link]

ECCE ELECTRON ENDCAP STRAWMAN

Tracking: MAPS, Micro Pattern Gaseous Detectors (MPGD)
Electron Detection: **PWO&SciGlass**
- Inner part: PWO crystals (reuse some)
- Outer part: SciGlass (backup PbGl)

h-PID: mRICH
- From yellow report

HCAL: Steel from magnet or Pb/Sc or Fe/Sc
- Not instrumented and only serve as flux return?
- Instrumented \w reduced thickness (lower energies)

ECCE CENTRAL BARREL STRAWMAN

Tracking: Silicon barrel tracker (optional Si/GEM hybrid)
Electron PID: SciGlass (backup: W/Sc (Pb/Sc) shashlik)
- SciGlass remains to be demonstrated
- Several backup options – lower resolution though

h-PID: hpDIRC & AC-LGAD
- Compact
- AC-LGAD never been shown for barrel configuration
- AC-LGAD backup: dE/dx (needs more space)

HCAL: magnet steel (**reuse**) - **Fe/Sc**

ECCE HADRON ENDCAP STRAWMAN

Tracking: MAPS, Micro Pattern Gaseous Detectors (MPGD)
h-PID: dRICH&TOF
e/h separation: TOF & aerogel
- TRD to separate electrons from high momentum hadrons?

Electron PID: W/ScFi, Pb/Sc or W/Sc shashlik
HCAL: Pb/Sc or Fe/Sc
- Alternative for improved resolution: dual readout, high-granularity

Recent Presentations

This table keeps evolving

Sub-component	slide/note	speaker, date	notes
N/A	link	Nicolas May 5	Detector configurations in the simulation
EMcal+Hcal Any rapidity	link	Craig May 18	Resue of SPACAL and Shashlik for EMCal or Hcal for any rapidity
EMCal Backward	link	Carlos May 18	Backward crystal EMCal simulation study
EMCal Barrel	link	Justin & Nathaly May 18	Simulation with PbWO