

- Calibration signals at strip level
 - ▣ Knowledge of absolute scale (ADC $\leftrightarrow$ MeV)
50% (CD) – HP. Data taken already. Need to produce gain corrections and put them on DB
- Offline with particles (mips)
 - ▣ Equalization of charge response for given pathlength
 - MB method 100% (LQ, GB)
 - Finalize definition of criteria for computing new calibrations 60%(LQ, GB) – LP
 - High-p muons ? 10% (LQ, GB) - LP
 - ▣ Probability maps for likelihood method
 - High-p muons selection 30% (LQ, GB) - MP
 - Finalize software machinery (db, etc) 50% (LQ, GB) - HP

dE/dx based identification

- Finalize identification technique
 - ❑ Identify (and reject) clusters affected by δ -rays 0% (LQ) - HP
 - ❑ Thresholds as a function of #hits of track (and η ?) 70% (LQ) - HP
 - ❑ Inclusion of ECAL measurement 0% (?) - MP
 - ❑ Identify useful discriminators 100% (LQ, GB)
 - dE/dx estimators
 - Pure discriminators: Smirnov, “Btag”, “product”
- Study discrimination power of discriminators
 - ❑ Efficiency and purity of selection vs threshold 90% (LQ, GB)
 - ❑ robustness of discrimination power against systematic shifts on charge scale or uncertainty on charge response 0% (LQ) - MP
 - ❑ Understand when new calibrations are needed 0%(LQ) - LP
- Background estimation from data
 - ❑ from (high-p) well identified muons: J/ψ , Y and Z 0% (?) - LP
- Efficiency of HSCP identification vs β , #hits (and η) from data 0% (?) - LP
 - ❑ Take high-p isolated tracks
 - ❑ Take very pure sample of proton tracks
 - ❑ Replace high-p track clusters with proton ones
 - ❑ Extract systematic error due to charge response uncertainty

High-level analysis tasks

- Generation of new signal and single particle data samples 0% (CD?) – MP
- Discovery scenario 10% (?) - LP
 - ❑ Mass measurement (details not developed in these slides)
 - ❑ Production mechanism
 - ❑ Cross section measurement
- No-signal scenario 10% (?) - LP
 - ❑ Can set upper limit on cross section for pair produced HSCP (in 2->2 process) as a function of mass

Cosmic data analysis

- Study stability of charge response 10% (AG, LQ) - HP
- Study dE/dx and discriminator's distribution 0% (AG, LQ)
 - ❑ Source of outliers
 - ❑ Rejection power vs threshold
 - ❑ Comparison with Simulation (feed-back and tune)
- Timing studies
 - ❑ Correct amplitudes by means of knowledge of muon timing
 - ❑ Fine synchronization
 - Online team has already done what could be done – no changes expected
 - ❑ Identify top-bottom and bottom-top muons
 - Expect only ~2 bottom-up muons/year.

- Low-level Simulation (tracker)
- Online trigger aspects
- Muon and ECAL detectors
- Final selection including p cut and TOF technique
-