**Benchmark Performance & Analysis**

Sub Detector – level:

 // Differential: Differential V.S. Polar angle & Energy

**Vertex:**

 Differential Eff,

 Intrinsic spatial & time (optional) resolution,

 Differential Occupancy (with beam background + MDI studies).

**Tracker:**

 Differential Eff.

 Differential Resolution of 5 track parameters.

 Differential Pid Capability: eff\*purity of Kaon id @ Z pole

 Sep. power

 On 3 prong tau decay @ Z pole.

**Calo:**

 Intrinsic energy resolution: wi/wo Clustering – Hit collection efficiency.

 Shower Profile & Pid potential (e, mu, hadron).

 Differential Eff.

 Di-particle separation power.

 Di photon;

 Pion + Photon;

**ToF: Time resolution & Efficiency.**

 Dedicated:

 LGAD,

 Multi-PRC

 Integrated with Calo.

**Muon: Efficiency & Noise Rate.**

**Global:**

 BMR

 Jet Origin id.

 Particle identification. Differential Efficiency & Purity (optional)

Physics Analysis Benchmarks.

1, H->SS @ 240 GeV

2, Vcb from W decay @ 240 GeV and W threshold (optional)

3, alpha-s from Z->Tautau @ 91.2 GeV

4, vvH, H->bb @ 360 GeV

5, Bs->DK @ 91.2 GeV, for CKM angle measurements (Gamma\_s, Gamma\_sb, etc)

 Relies on Jet Origin id, Kaon id, Tracking.