

Workplan for the Detector Optimisation and Validation WG

Mandate:

The CLICdp detector optimisation and validation working group coordinates the work on the new CLIC detector model and its validation of performance with basic physics observables. The latter is closely linked to the software validation. The WG will continue its activities until the performance of the new model has been fully assessed and documented.

1) try to make plots of momentum resolution which are **directly comparable to CDR plots** (both for CLIC_SiD for resolution vs. p and for CLIC_ILD for resolution vs. pT; choose the same angles as the CDR)

2) expand **tracking validation** studies:

efficiency studies for single particles to include identification efficiency and fake rates (see CDR-related work, LCD notes)

3) continue with tt_bar, bb_bar;

- pT resolution as function of pT and polar angle
- tracking eff. as function of pT and polar angle
- track fake rate as function of pT and polar angle
- tracking efficiency as function of distance to the closest hit
- Ro and Zo resolutions as function of pT and polar angle

4) all of the above with overlay of $\gamma\gamma \rightarrow$ hadrons background (60 BX)

5) expand **calorimetry validation** studies:

- A1) Single electrons, photons, muons and charged pions (neutrons are not needed)
- A2) Identification efficiency as function of pT and polar angle
- B1) tt_bar \rightarrow bqqblv events at 3 TeV: electron and muon identification efficiency as function of pT and polar angle; electron and muon fake rates as function of pT and polar angle
- B2) W/Z separation; (fake) missing energy;

6) all of point 5 with overlay of $\gamma\gamma \rightarrow$ hadrons (60 BX)

7) Flavour Tagging (Nacho)

8) hadronic tau decays - reconstruction (Matthias)

9) Forward calorimetry - reconstruction (Jean-Jacques)