



Physics Conveners' Meeting

March 27, 2018

***The 4th Meeting of the Particle & Nuclear
Physics WG will happen on***

April 13, 2018

***The 4th Meeting of the TDR Validation WG
will happen on***

April 19, 2018

Action Items (from PC meeting in Ichinoseki)

1. Submit abstracts to ICHEP (physics):

- Study of the Higgs couplings to leptons and Higgs CP properties at the ILC
- 3rd Generation Quark and Electroweak Boson Couplings at the 250 GeV stage of the ILC
- Search for Light Scalars Produced in Association with a Z boson at the 250 GeV stage of the ILC

Status: done

2. Action Items regarding optimisation benchmarks:

- physics coordinators: create optimization ***benchmark subpage on confluence***
Status: done (Thanks to Jenny, see the next page)

<https://confluence.desy.de/display/ILD/Benchmarks+for+physics-driven+detector+optimisation>

- physics WG conveners: prepare ***short description for each benchmark***,
defining the actual observables and serving as entry point
for newcomers (point to existing analyses etc)
- physics coordinators & WG conveners: talk to ILD members and encourage them to contribute

<https://confluence.desy.de/display/ILD/ILD+Physics+Working+group>

Benchmarks for physics-driven detector optimisation

Jenny List posted on 02. 3. 2018 08:37h - last edited by Jenny List on 02. 3. 2018 08:48h

For a full list and questions to be addressed for each benchmark see [presentation by J.List at ILD Workshop 2018](#)

- **hadronic branching ratios of the Higgs: $H \rightarrow bb/cc/gg$**
- **Higgs mass from $H \rightarrow bb$**
- **branching ratio $H \rightarrow \mu^+ \mu^-$**
- **limit on $H \rightarrow$ invisible**
- **tau polarisation, A_{FB} , A_{LR} , decay modes in $e^+e^- \rightarrow \tau^+ \tau^-$**
- **W mass, TGCs, beam polarisation from $e^+e^- \rightarrow WW \rightarrow qq \lnu$**
- **QGCs $e^+e^- \rightarrow \nu\nu qqqq$**
- **A_{LR} , JES calibration from $e^+e^- \rightarrow \gamma Z$**
- **A_{LR} , A_{FB} from $t\bar{t} \rightarrow bb qqqq$**
- **discovery range, cross-sections, masses for low delta M Higgsinos**
- **discovery range, mass, cross-section, operator type for WIMPs in mono-photon channel**
- **discovery range for low mass extra Higgses in $e^+e^- \rightarrow Zh$**

Today, I want to hear about status and plan of each subgroup and discuss our strategy/schedule towards benchmark studies, ILD document, input to LCC physics WG report.