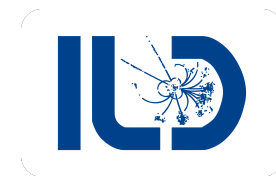


# Software Coordinators Report

ILD Software and Analysis Meeting

24.11.21

Frank Gaede, DESY

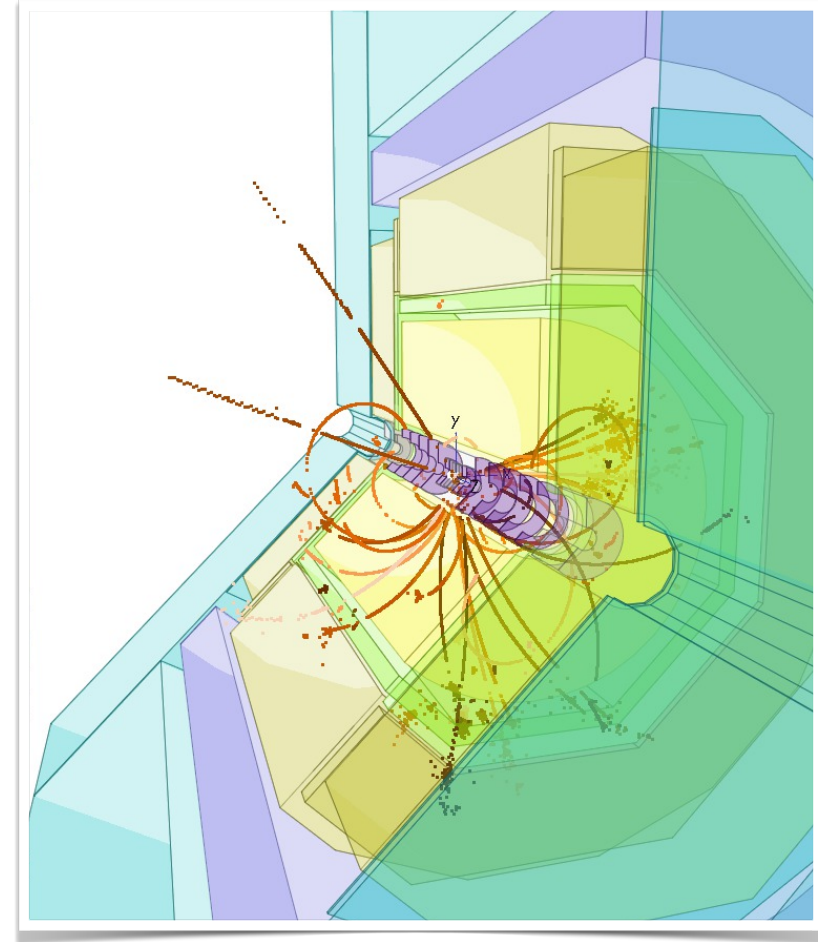


# Outline



- Generator
- Simulation
- Reconstruction
- Monte Carlo Production

report from SW convenors meeting last Friday



# Reconstruction

T.Madlener

- new iLCSoft patch release: **v02-02-03** (T.Madlener, B.Dudar, ...):
- [https://github.com/iLCSoft/iLCInstall/blob/master/doc/release\\_notes\\_ilcsoft\\_v02-02-03.md](https://github.com/iLCSoft/iLCInstall/blob/master/doc/release_notes_ilcsoft_v02-02-03.md)
- You can find the new release installed at the following places:
- **/cvmfs/ilc.desy.de/sw/x86\_64\_gcc82\_centos7/v02-02-03**
- **/afs/desy.de/project/ilcsoft/sw/x86\_64\_gcc82\_centos7/v02-02-03**
- The corresponding, updated ILDConfig can be found at:
- **/cvmfs/ilc.desy.de/sw/ILDConfig/v02-02-03**

# Monte Carlo Production

H.Ono, A.Miyamoto

- request for new production:
  - ZHH/ZZH at 500, 550 and 600 GeV
  - revisit Higgs self-coupling analysis
- J.Tian has already produced generator sample at 500 GeV
  - => verified by DESY group**

## The MC Request

### Overview

- event generation:**
  - start with only "ZHH" and "ZZH" (as usual each Z decay mode, separated into qq, ll, ee, vv)
  - 3 ECMs: 500 GeV, 550 GeV, 600 GeV
  - for aim ~ 2x the statistics Claude had (per ECM) => ~6 M events per ECM, i.e. 18M total
- sim/rec:**
  - start with 500 GeV (for comparison to Claude approx. compatibility with IDR samples)
  - eventually also 550 or 600 GeV, t.b.d. after generator-level (or SGV-level?) comparisons
- other relevant SM backgrounds**  
=> request later at least for one ECM, t.b.d. together with eg tt and ttH analysers:
  - 6f with at least 2 b's, i.e. "ZZZ" / "tt" / "ZWW"
  - 4f with at least 2 b's, i.e. "bbbb", "vvbb", "eebb", "llbb"
  - ttH / ttZ / ttg (g -> bb)
- time horizon for first step (= ZHH & ZZH DSTed for 500 GeV):**
  - ~end of September
  - reason: 1 new PhD, 1 new master student starting Oct 1 (and 1 postdoc a bit later)

J.List

- will start production using **iLCSoft v02-02-03** w/
  - calibration samples
  - background samples
  - 500 GeV physics samples

## The MC Request

### Details

ZHH		500 GeV		550 GeV		600 GeV		total
		eLpR	eRpL	eLpR	eRpL	eLpR	eRpL	
	qqHH	1.00E+06	1.00E+06	1.00E+06	1.00E+06	1.00E+06	1.00E+06	6.00E+06
	nnHH	5.00E+05	5.00E+05	5.00E+05	5.00E+05	5.00E+05	5.00E+05	3.00E+06
	llHH	3.00E+05	3.00E+05	3.00E+05	3.00E+05	3.00E+05	3.00E+05	1.80E+06
	eeHH	2.00E+05	2.00E+05	2.00E+05	2.00E+05	2.00E+05	2.00E+05	1.20E+06
	total	2.00E+06	2.00E+06	2.00E+06	2.00E+06	2.00E+06	2.00E+06	1.20E+07
ZZH								
	qqqqH	4.00E+05	4.00E+05	4.00E+05	4.00E+05	4.00E+05	4.00E+05	2.40E+06
	nnqqH	3.00E+05	3.00E+05	3.00E+05	3.00E+05	3.00E+05	3.00E+05	1.80E+06
	llqqH	2.00E+05	2.00E+05	2.00E+05	2.00E+05	2.00E+05	2.00E+05	1.20E+06
	eeqqH	1.00E+05	1.00E+05	1.00E+05	1.00E+05	1.00E+05	1.00E+05	6.00E+05
	total	1.00E+06	1.00E+06	1.00E+06	1.00E+06	1.00E+06	1.00E+06	6.00E+06

Eventually, at least for one ECM:

+ SM 6f with at least 2 b's, i.e. "ZZZ" / "tt" / "ZWW"  
 + SM 4f with at least 2 b's, i.e. "bbbb", "nnbb", "llbb", "eebb"  
 + ttH / ttZ / ttg (g->bb)

Grand total 1.80E+07