



# LDC Reconstruction and Analysis Kickoff Meeting

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# Overview of Analyses

- $ZH \rightarrow ZWW$  Simdet Jörgen particle flow
- Something with Dark Matter ? Christoph hermeticity
- $ZH \rightarrow \mu\mu X$  ? Katarzyna (Dennis?) tracking
- PID?
- $t\bar{t}$  ? Vasily particle flow
- $\tau^-\tau^+$  Full Simulation Oliver S./Jenny tracking, particle flow?
- My apologies if I should have forgotten someone/something

# Overview of High-Level Tools

- Particle Flow [Marlin](#) Oliver W., Vasily?
- Photon Finding [Marlin](#) Predrag
- $\mu$  Finding [Marlin](#) Dennis
- Tracking [Marlin](#) Hartwig
- Low-Level Tracking (test beams) [Marlin](#) Klaus
- Again my apologies if I should have forgotten someone/something
- + Frank: Framework, Geometry, . . .

# What's Missing?

- Do we need better matching between tools developers and analysts?
- Analyses will and should move to more full simulation
- Do we need analyses focussing on vertexing?
- 'Service'-Measurements: Polarization, CM-Energy (distribution), etc: Needed for many other analyses, very important for overall performance
- Either make sure we have cooperation in the missing areas (e.g. Thorsten Kuhl, Klaus Desch for Vertexing with  $H \rightarrow bb, cc?$ ) or try to gain some expertise in these fields?

# Focus of the Analyses

- Make sure there is a complete and usable Software package
- Analysis: Push developers to make realistic, good and usable tools with good interfaces to each other
- Analysis: Don't focus on fancy analysis, but on a robust analysis, and use it to test detector configurations, resolutions, tools
- Provide developers of tools with fast feedback on the physics possible with their tools
- Most important goal of the analyses: Give detector developers feedback on necessary resolution, dimensions, etc for the most optimal detector of all times
- Don't forget the machine: Influence of bunch pattern, crossing angle, beamstrahlung, polarization, other backgrounds (neutrons etc)

# Software Environment

- Need centralized installation of tools (Mocca, etc)?
- Need centralized production of SM-background samples?
- Need to optimize use of grid for storage and production of (fully simulated) MC samples
- Need to find out how to best make use of the coming combined LHC-ILC cluster
- For the assessment of resources: as soon as possible we need statistics:  
How much CPU for full simulation and reconstruction for which samples

# Scope of the Meeting

- Of course: Ensure good communication between developers of higher-level reconstruction tools and users
- Make a coordinated effort to find solutions for problems in simulation, basic reconstruction . . . in cooperation with (external) experts
- Organise additional common resources if necessary
- Goal: Maintain several complementary analyses, covering the as many as possible of the major features of the detector:  
Vertexing, Tracking, Particle Flow, PID, Hermeticity
- Goal: Don't lose expertise but allow good knowledge transfer by coordinating old and new members of the group
- Goal: Don't focus on fancy analysis, but on good, easily usable reconstruction tools and [detector optimization](#)

# Format of the Meeting

- Proposed regular date: Thursday 14:00 – 15:00? OK for everybody?
- Usually one talk per meeting + discussion
- Talks should be
  - Quick and dirty
  - Not primarily about finished stuff, but about work in progress
  - Pointing out problems, challenges, obstacles
  - A good basis for discussions