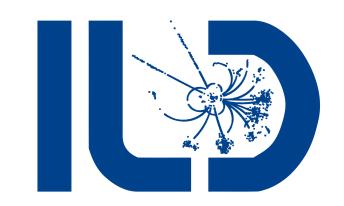


# Physics Coordinators' Report

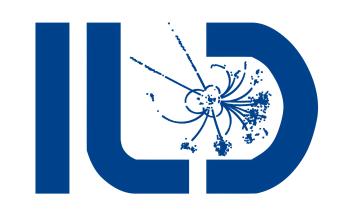
J. List,
ILD Software & Analysis Meeting
December 02, 2020



# Snowmass & IDT-WG3

- Michael Peskin is organising "yetanother-big-report" as ILC input to Snowmass
- Several ILD members among the chapter editors
- IDT is now discussing substructure for WG3, also based on ILD input (physics, software, detectors, interfaces)

Contents	6.3 The SiD Detector	10.1.1 Top Quark Mass
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2 Outline of the ILC Physics Case	6.4 New Technologies for ILC Detectors	10.2.1 WW fusion
3 Route to the ILC	6.4.2 Calorimetry	10.2.3 Top Quark Yukawa Coupling
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3.3 ILC Laboratory	6.4.5 Muon System	10.6 New Particle Searches – Dark Sector
4.1 Parameters for the Energy Stages of ILC	7.1 ILC Fast Simulation Frameworks	11.1 Precision Tests of the Standard Model  11.1 Precision Standard Model Theory for ILC  11.2 Frameworks for Effective Field Theory  11.3 Expectations from a Unified SMEFT Analysis  11.4 Expectations for CP-Violating Operators  11.5 Expectations for Heavy-Quark Operators  12 ILC Addressing TeV New Physics  12.1 Multiple Higgs and Supersymmetric Models  12.2 Composite Higgs Models
5.2 Energy and Luminosity	8.5 Precision QCD	12.4 The "Higgs Inverse Problem"
6 ILC Detectors 6.1 Detector Requirements for Physics Program 6.2 The ILD Detector	9 ILC Precision Electroweak Measurements 9.1 Radiative Return to the Z	13 ILC Fixed-Target Program  13.1 ILC Facilities for Fixed-Target Experiments  13.2 Nuclear Physics with Electron and Positron Beam
6.2.2 R&D issues for the ILD design	10 ILC Physics Measurements at 350, 500, and 1000 GeV 10.1 Top Quark	13.3 Beam-Dump Experiments



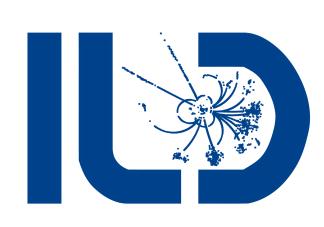
13.4 Dedicated Secondary-Beam Experiments . . . . .

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4.1 Parameters for the Energy Stages of ILC	14.1.1 Very High Gradient Superconducting RF	11.2 Frameworks for Effective Field Theory
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4.3 ILC Upgrade Path		11.4 Expectations for CP-Violating Operators
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5.2 Energy and Luminosity	· · · 8.5 Precision QCD	12.3 Other Models with New TeV-Scale Physics
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		12.5 Beyond-Standard-Model Signals from the Top Quark
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6.2.1 Detector description and capabilities .	10 ILC Physics Measurements at 350, 500, and 1000 GeV	13.2 Nuclear Physics with Electron and Positron Beams
6.2.2 R&D issues for the ILD design		13.3 Beam-Dump Experiments

# Publications



## Journal papers

- H->mumu (S.Kawada): re-submitted to EPJC after very positive response from referee asking for minor changes
- · FIR edge detection (S.Caiazza, M.Chera):
  - in ILD circulation until Dec 9, c.f.
     <a href="https://agenda.linearcollider.org/event/9003/">https://agenda.linearcollider.org/event/9003/</a> => please take a look and send your comments!
  - brief update report today by Stefano
- Extra Higgs search with recoil technique (Y.Wang):
  - brought 250 GeV analysis in sync with 500 GeV IDR benchmark study
  - starting to write paper draft
- Heavy quark pairs (S. Bilokin, A.Irles): work on draft resumed, target submission to referees in Jan 21

Proceedings - s. right column deadline for ICHEP submission: Dec 11

#### ILD, a Detector for the International Linear Collider

## will come in 1-2 days

Improving Electroweak Precision Observables Including mW, FW, ALR and TGCs with the ILD Detector

Speaker: Graham Wilson

**Speaker**: Tomohiko Tanabe

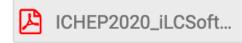
Heavy quark production in high energy electron positron collisions

Speaker: Adrian Irles (IFIC UV/CSIC)

will focus on paper draft instead

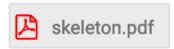
The ILD Software Tools and Detector Performance

Speaker: Remi Ete (DESY)



### ILC as a SUSY discovery and precision instrument

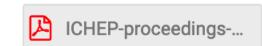
Speaker: Maria Teresa Nunez Pardo de Vera (DESY)



#### Precision Higgs physics at the ILC, and its impact on detector design

This presentation was given on behalf of LCC.

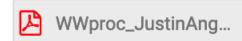
Speaker: Daniel Jeans (KEK)



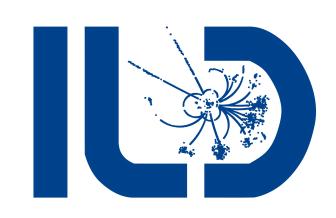
#### LCWS2019: Study of WW → qqlv at ILC500 with ILD

Deadline of comments: December 20, 2020

Speaker: Justin Lee Singer-Anguiano (The University of Kansas (US))







- moved sw/ana meeting 1h later to make it a bit less painful for our new US West Coast collaborators:
   06:00 SLAC, 08:00 Kansas, 15:00 DESY, 23:00 KEK
- limit duration to <= 1 h</li>
- instead go weekly (again)
- reevaluate time&frequency in mid-January, adjust if necessary for February
- · schedule (also on <a href="https://confluence.desy.de/display/ILD/ILD+Physics+Working+group">https://confluence.desy.de/display/ILD/ILD+Physics+Working+group</a>):
  - December 2: chaired by Jenny List
  - · December 9: chaired by Daniel Jeans
  - December 16: chaired by Keisuke Fujii

## **CHRISTMAS & NEW YEAR BREAK**

- January 13: chaired by Frank Gaede
- January 20: chaired by Jenny List
- January 27: chaired by Keisuke Fujii