

PSB report

2021 June 04

ILD meeting (online)

K. Kawagoe (Kyushu-U)

- Roles and activities
- New membership
- Conference talks
- Topical papers
- ILD notes

Roles and activities

- <https://confluence.desy.de/display/ILD/ILD+Publication+and+Speakers+Bureau>
- **Mandate and rules**
 - “Communication of results and progress within the ILD group is largely done through publications and conference contributions. The ILD publication and speakers’ bureau (PSB) coordinates and oversees this important aspect within ILD.”
 - Approved publication rules are given on the confluence page.
 - In general, analysis based on ILD full simulation data should be internally reviewed in ILD.
- **Activities**
 - **ILD Publications: coordination of internal review processes**
 - Papers
 - Topical papers
 - ILD notes (public and internal)
 - Conference proceedings
 - **Conference presentations**
 - Submission of ILD abstracts to conferences
 - Finding speakers/presenters of accepted abstracts
 - Circulation of draft slides / posters
 - Rehearsal talks
- **Email: ild-psb@desy.de**

New PSB membership

- **May 2021 ~ (after establishing new ET)**
 - Ties Behnke (ex-officio, Spokesperson)
 - Mikael Berggren
 - Ivanka Bozovic
 - Daniel Jeans (ex-officio, IA chair)
 - Kiyotomo Kawagoe (chair)
 - Alberto Ruiz
 - Monthly PSB meeting
- **Note: IDT-WG3 has also its speakers' bureau**
 - Members: Ivanka Bozovic, Alain Bellerive, KK
 - The two bureaus should work coherently



LC workshops

- **International Workshop on Linear Colliders: LCWS2021**
 - March 15-19, 2021, virtual
 - Proceedings (voluntary but recommended)
 - **A total of 9 contributions** (PHYS: 6, SOFT: 2, TECH: 1) were reviewed and submitted (compared with only two contributions for LCWS2019 !!)
- **ILC Workshop on Potential Experiments (ILCX2021)**
 - October 26-29, 2021, Tsukuba, Japan
 - Website is open
<https://agenda.linearcollider.org/event/9211/overview>
 - Registration will start in June.
 - Style (face-to-face or online/hybrid) will be decided by the end of June.
 - Hope to have many presentations from ILD !!

Other conferences

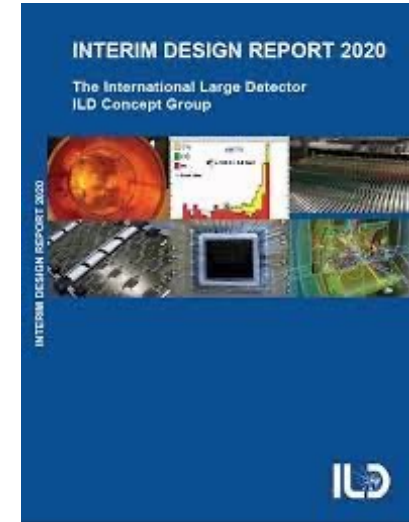
- **TIPP2021 (May 24-29, online)**
 - <https://tipp2021.triumf.ca>
 - Adrian Irlles gave a talk on the ILD detector.
- **EPS-HEP (July 26-30, online, hosted by DESY)**
 - <https://www.eps-hep2021.eu>
 - A total of 8 abstracts submitted
 - The results of acceptance are arriving. We will select speakers of accepted abstracts.
 - **Note that contribution to the proceedings is mandatory (for ICHEP2020, only two contributions out of five ILD talks)**
- **PANIC 2021 (September 5-10, Lisbon → online)**
 - Abstract submission: deadline June 20
 - Planning to submit some of the EPS-HEP abstracts
 - Only one abstract/person is allowed → PSB will ask individuals to submit their abstracts
- **Lepton-Photon 2021 (Manchester)**
 - <https://www.leptonphoton2021.org>
 - Postponed to **January 10-14, 2022**, no further information on the webpage
- **ICHEP 2022 (Bologna)**
 - <https://www.ichep2022.it>
 - **July 6-13, 2020**. No further information on the webpage

ILD publications in 2020-2021

A Paper

“International Large Detector: Interim Design Report” (IDR)

- The ILD concept group (full author list)
- [arxiv:2003.01116](https://arxiv.org/abs/2003.01116), DESY 20-304, KEK 2019-57



Topical Papers

1. **“WIMP dark Matter at the International Linear Collider”**, ILD-PHYS-2020-001:
 - Authors: **M. Habermehl**, M. Berggren, J. List
 - Reviewers: A. F. Zarnecki, T. Tanabe
 - [Phys. Rev. D101 \(2020\) no.7, 075053](https://arxiv.org/abs/2001.03011) / [arxiv:2001.03011](https://arxiv.org/abs/2001.03011)
2. **“Prospects of measuring the branching fraction of the Higgs boson decaying into muon pairs at the International Linear Collider”**, ILD-PHYS-2020-002
 - Authors: **S. Kawada**, M. Berggren, J. List
 - Reviewers: I. Bozovic, A. F. Zarnecki
 - [Eur. Phys. J. C80 \(2020\) 1186](https://arxiv.org/abs/2009.04340) / [arxiv:2009.04340](https://arxiv.org/abs/2009.04340)
3. **“Kinematic Edge Detection Using Finite Impulse Response Filters”**, ILD-PHYS-2020-003
 - Authors: M. Berggren, **S. Caiazza**, **M. Chera**, J. List
 - Reviewers: D. Jeans, R. Ete
 - [arXiv:2012.11415](https://arxiv.org/abs/2012.11415) submitted to NIM A

An ILD note

1. **“Prospects for the measurement of the b-quark mass at the ILC”**, ILD-PHYS-PUB-2021-001:
 - Authors: J. Fuster, **A. Irlles**, G. Rodrigo, **S. Tairafune**, M. Vos, H. Yamamoto, R. Yonamine
 - Reviewers: I. Bozovic
 - This note will be a part of a larger publication.

Topical papers in progress

1. **“Full simulation study of the process $e+e\rightarrow bb$ at \sqrt{s} = 250 GeV at the ILC”** (since 2017)
 - Authors: R. Poeschl, S. Bilokin *et al.*
 - Reviewers: K. Fujii and M. Berggren
2. **“Search for low mass scalar particles”** (since 2018)
 - Authors: Y. Wang *et al.*
 - Reviewers: J. Tian and KK
3. **“Development of a Vertex Finding Algorithm using Recurrent Neural Network”** (since 2021 February)
 - Authors: K. Goto, T. Suehara *et al.*
 - Reviewers: D. Jeans and M. Meyer
4. **“Measurement of $\sigma(e+e\rightarrow HZ) \times \text{Br}(H \rightarrow ZZ^*)$ at the 250 GeV ILC ”** (since 2021 April)
 - Authors: E. Antonov and A. Drustkoy
 - Reviewers: I. Bozovic + A. F. Zarnecki

Physics notes of IDR benchmark studies

IDR was published in 2020. Supporting documents (physics notes) have been almost completed (only one left ...)

- ILD-PHYS-PUB-2019-001: Higgs mass from $H \rightarrow bb$: Junping (Frank S.) , **completed.**
- ILD-PHYS-PUB-2019-002: $H \rightarrow \mu^+\mu^-$: Shin-ichi (Ivanka, Filip), **completed.**
- ILD-PHYS-PUB-2019-003: $H \rightarrow$ invisible: Yu (Marcel), **completed.**
- ILD-PHYS-PUB-2019-004: $e^+e^- \rightarrow \tau^+\tau^-$: Keita, Daniel (Mikael), **completed.**
- ILD-PHYS-PUB-2019-005: $e^+e^- \rightarrow$ nunu qq qq: Jakob (Taikan), **completed.**
- ILD-PHYS-PUB-2019-006: $e^+e^- \rightarrow$ gamma Z: Takahiro (Matthew), **completed.**
- ILD-PHYS-PUB-2019-007: $e^+e^- \rightarrow bb/tt$: Roman etc. (Marcel), **completed.**
- ILD-PHYS-PUB-2019-008: $H \rightarrow bb/cc/gg$: Masakazu (Hiroaki, Frank S.)
 - polishing the draft for circulation in ILD :almost done. Some work needed to answer some questions.
 - No update since sometime last year.
- ILD-PHYS-PUB-2019-009: Low delta M Higgsino Swathi (Akimasa), **canceled.**
- ILD-PHYS-PUB-2019-010: WIMPS in mono-photon channel: Ryo (Moritz, Filip), **completed.**
- ILD-PHYS-PUB-2019-011: extra Higgses in $e^+e^- \rightarrow Zh$: Yan (Junping, KK), **completed.**

Summary

- New PSB membership since May 2021.
- Recent activities are reported.
- We would like to encourage ILD people
 - to publish results as topical papers or notes
 - Categories: PHYS, SOFT, TECH
 - to present results at conferences
 - to join internal reviews and practice talks

Thank you for your cooperation !!

Backup

ILD abstracts submitted to EPS-HEP 2021

<https://confluence.desy.de/display/ILD/Abstract+submission>

1. Prospects for the measurement of the b-quark mass at the ILC
2. A combined fit to the Higgs Branching Ratios at ILD
3. Jet energy calibration using $e^+e^- \rightarrow \gamma Z$ process at the ILC
4. New physics searches at ILC
5. Kinematic fitting for ParticleFlow Detectors at Future Higgs Factories
6. Charged Hadron Identification with dE/dx and Time-of-Flight at Future Higgs Factories
7. Dark matter searches with mono-photon signature at future e^+e^- colliders, (ILC+CLIC)
8. Heavy Neutrinos at Future Linear e^+e^- Colliders”, (ILC+CLIC)

Note: IDT-WG3 speakers bureau submitted 6 other abstracts. The IDT-WG3 talks will need speakers, too.