



ILD meeting  
08.10.2024

ILD Publication & Speakers Bureau

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Report

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# Conferences & Workshops (21 talks, 6 posters)

Contributions from the last ILD PSB report in May

- SUSY2024 (Madrid, 10-14 June 2024)
  - <https://indico.cern.ch/event/1354279/>
  - Jesús P. Márquez, Probing GHU models at the ILC with di-quark AFB at c.m.e. above the Z mass
- Corfu Summer Institute - Workshop on the Standard Model and Beyond, (Corfu, Greece, August 25 - September 4)
  - <https://physics.ntua.gr/corfu2024/sm.html>
  - Jan Klamka , Long-lived particle searches with the ILD experiment

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LCWS2024 (Tokyo, 8-11 July 2024)

<https://agenda.linearcollider.org/event/10134/>

**ILD talks (12 +3 posters)**, <https://agenda.linearcollider.org/event/10372/>

## 10 proceedings

Jan Klamka et al., Long-lived particle searches with the ILD experiment

Daniel Jeans et al., Beamstrahlung backgrounds in ILD at linear (ILC) and circular (FCCee) colliders

Jurina Nakajima et al., Developing KinkFinder at ILD

Andrea Siddharta Maria et al., Optimal Collision Energy for Higgs Precision Measurements at the ILC250

Filip Zarnecki et al., Prospects for light exotic scalar measurements at the e+e- Higgs factory

Mikael Berggren et al., Stau searches at future e+e- colliders

Krzysztof Mekala et al., Prospects for constraining light-quark electroweak couplings at Higgs factories

Paul Wahlen et al., Particle-flow reconstruction with Transformer

Jenny List et al., Searching for new physics in WW and single-W events

Risako Tagami et al., Application of Particle Transformer to quark flavor tagging in the ILC project

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Contributions from the last ILD PSB report in May

ICHEP 2024 (Prague, 18-24 July 2024)

<https://ic hep2024.org>

ILD talks (7+3 posters) <https://agenda.linearcollider.org/event/10391/>

4 proceedings PoS [https://pos.sissa.it/cgi-bin/author/gest\\_conf.cgi?confid=476](https://pos.sissa.it/cgi-bin/author/gest_conf.cgi?confid=476)  
(deadline October 21<sup>st</sup> )

Taikan Suehara et al., High level reconstruction with deep learning at ILD full simulation

Ivanka Bozovic et al., Probing CPV mixing in the Higgs sector in VBF at 1 TeV ILC

Filip Zarnecki et al., Long-lived particle searches with the ILD experiment

Filip Zarnecki et al., Search for Exotic Scalars at the International Linear Collider

# Incoming conferences & workshops (4)

- CEPC WS, Hangzhou, China

October 23-27 <https://indico.ihep.ac.cn/event/22089/>

- Metrology challenges in integrated luminosity measurement at CEPC and ILC  
I.Smiljanic
- Prospects for light exotic scalar measurements at the e+e- Higgs factory  
Filip Zarnecki
- Beamstrahlung backgrounds in ILD at linear (ILC) and circular (FCCee) colliders  
Daniel Jeans

- HIGGS 2024, Upsala, Sweden

November 4-8, <https://indico.cern.ch/event/1391236/>

- CPV mixing in the Higgs sector in VBF at 1 TeV ILC  
N. Vukasinovic

# Topical papers published (2)

1. **Probing Gauge-Higgs Unification models at the ILC, with AFBb and AFBc above the Z-pole**
  - Authors: A. Irlles, Roman Poeschl, F. Richard *et al.* (including a few theorists)
  - ILD-PHYS-2024-001
  - Published as [arXiv:2306.11413](https://arxiv.org/abs/2306.11413)
  - [Eur. Phys. J. C 84, 537 \(2024\)](https://doi.org/10.1140/epjc/s10052-024-12918-z) <https://doi.org/10.1140/epjc/s10052-024-12918-z>
2. **Probing CPV mixing in the Higgs sector in VBF at 1 TeV ILC**
  - Authors: N. Vukasinovic, IBJ *et al.*
  - ILD-PHYS-2024-002
  - Published as [arXiv:2405.05820](https://arxiv.org/abs/2405.05820)
  - [Phys. Rev. D 110, 032011 \(2024\)](https://doi.org/10.1103/PhysRevD.110.032011), <https://doi.org/10.1103/PhysRevD.110.032011>

# Topical papers to be submitted to journals (1)

## 1. Searching for LLP at the ILD

- Authors: Jan Klamka *et al.*
- Reviewers: Mikael Berggren, Peter Kluit
- Collaboration review completed, to be submitted to JHEP
- [arXiv:2409.13492](https://arxiv.org/abs/2409.13492)

# Topical papers under internal reviewing (3)

1. **Metrology requirements for the integrated luminosity measurement using small angle Bhabha scattering at ILC**
  - Authors: Ivan Smiljanic, Ivanka Bozovic, Goran Kacarevic, Mirko Radulovic, and Jasna Stevanovic
  - Reviewers: Alberto Ruiz and Graham Wilson
  - ILD-PHYS-2024-003
  - Ongoing review by Graham Wilson, to be submitted to Progress of Theoretical and Experimental Physics
2. **Strange quark as a probe for new physics in the Higgs sector**
  - Authors: Matthew Basso, Valentina Cairo
  - Reviewers: Alberto Ruiz and Ulrich Einhaus
  - Ongoing collaboration review , to be submitted to Eur. Phys. J. C
3. **CaloFlux: A Tool to Estimate Fluxes in Calorimeters at Colliders**
  - Authors: Vincent Boudry and Khalid Hassouna
  - Reviewers: Alberto Ruiz and Taikan Suehara
  - Foreseen for publication as a technical report in JINST



# Topical papers in progress (3)

1. The SUSY reach of Higgs Factories in the most challenging scenario: scalar  $\tau$ -leptons with lowest cross-section and small mass differences
  - Authors: Mikael Berggren *et al.*
  - Reviewers: Alberto Ruiz and Taikan Suehara
2. Search for low mass scalar particles
  - Authors: Maria Teresa Nunez Pardo De Vera *et al.*
  - Reviewers: Junping Tian and Kiyotomo Kawagoe
3. Sensitivity to anomalous VVH couplings at the ILC
  - Authors: Junping Tian, Tomohisa Ogawa *et al.*
  - Reviewers Jenny List and Ivanka Bozovic

# Summary

Current status of ILD publications and talks (since the last ILD meeting in May 2024)

ILD papers  $\Sigma$	in progress	under review	published
	4	3	1
	3	4 (3 int.+1 ext.)	2
	<b>4 to go</b>		<b>3</b>

ILD talks & posters  $\Sigma$	given	proceedings
	2	1
	21+6 posters	14
	<b>29</b>	<b>15</b>