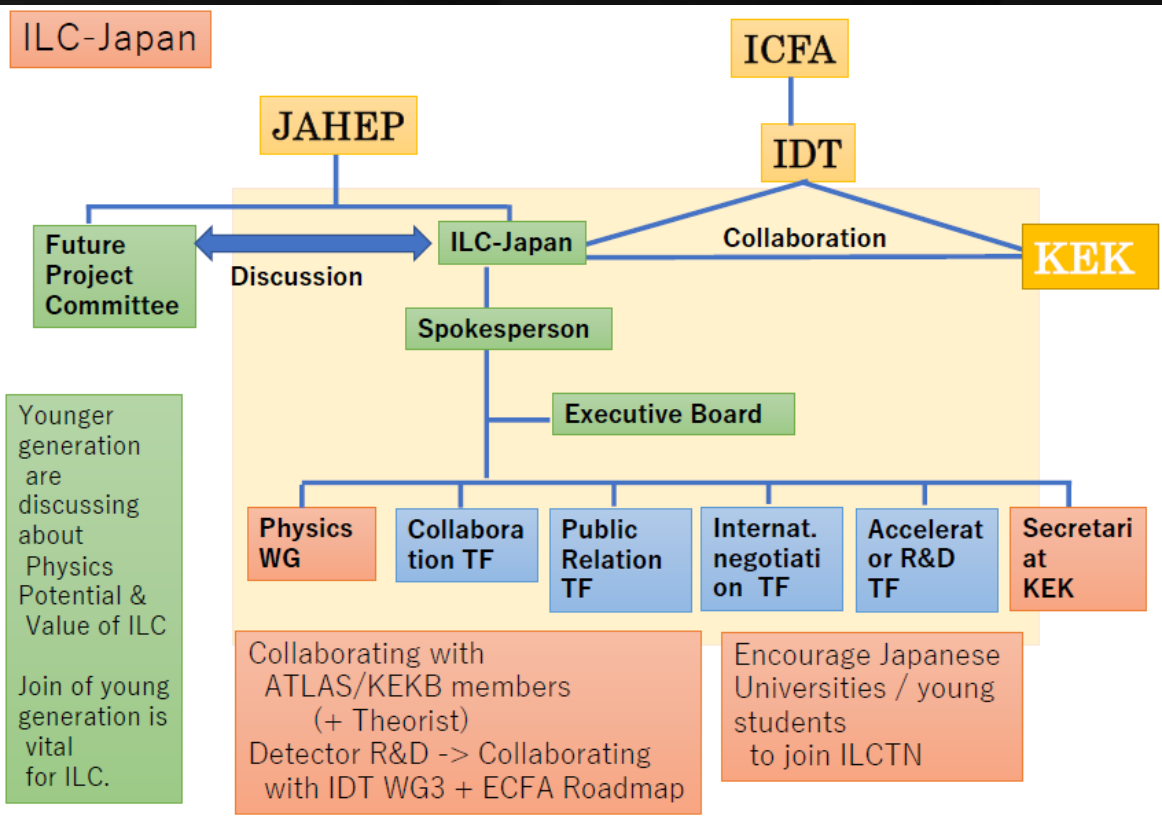


Introduction

Taikan Suehara

(Kyushu U. → ICEPP, U. Tokyo (from October))

ILC-Japan and physics WG



Asai-san's slides at LCWS2023

ILC-Japan physics WG

- M. Ishino (chair)
- T. Suehara (co-chair)

Core group formed at May this year

- K. Tsumura (Kyushu U., theory)
- T. Kitahara (ITP Beijing, theory)
- K. Nakamura (KEK, Belle II)
- T. Nobe (U. Tokyo, ATLAS, - Sep. 2023)
- T. Masubuchi (U. Tokyo, ATLAS, Oct.2023-)
- D. Jeans (KEK, ILC)
- J. Tian (U. Tokyo, ILC)
- K. Fujii (KEK, ILC)

Situation of “ILC phys/det studies” in Japan

- Physics/detector studies with ILD activities in Japan (2006-)
 - KEK/Sokendai (physics, vertex, TPC, MDI, ...) center of activities
 - U. Tokyo (physics, calorimeter)
 - Kyushu U. (physics, calorimeter)
 - Tohoku U. (physics, vertex, MDI)
 - Shinshu U. (calorimeter) Iwate U. (TPC) Saga U. (TPC),...
- KEK people significantly reduced recent years (others also)
- Need to restructure or having new members
 - Some trials exist but not very successful up to now
 - One of main topics for ILC-Japan physics WG (and coll. TF)

Purpose of ILC-Japan physics WG

Personal view

- Raise enthusiasm of Japanese community for ILC by
 - Discussing “killer science” of ILC
 - Grand view of ILC physics?
 - Try to find attractive studies?
 - Finding ways to have more people working on ILC
 - For physics studies
 - For detector studies
 - Finding ways to collaborate with other experiments
 - Finding a way to go for Japanese community?
 - What should be done for early realization of ILC?
- Restructure and promote ILC-related activities

Activity of new “core group”

- Review and summarize “Snowmas white paper of ILC”
 - arXiv:2203.07622
 - Chapter 8-10 (physics cases at various energies)
 - Chapter 13-14 (interpretation of the results)
- 7 meetings so far
 - 22nd May: kickoff
 - 29th May: general discussion
 - 19th June: Chapter 8
 - 26th June: Chapter 9
 - 19th July: Chapter 10
 - 31st July: Chapter 13
 - 23rd August: Chapter 14
 - Summary in following talks (Ch. 8-10 by Ishino-san, 13-14 by Junping)

CFP studies for e+e- colliders

[R] 電子・陽電子コライダー班

メンバー：

坂下、奥村、石川、末原、谷口、岩崎、飯山、佐藤、全、榎本、梅森、寄田、生出、佐藤(優)、佐藤(大)

今後20~30年、さらに先の次世代で魅力的な「電子・陽電子線形コライダー実験」の検討

エネルギーフロンティア電子陽電子線形コライダーは日本の高エネルギー物理の将来を考えるにあたって筋の良い将来プロジェクトの候補であることを再認識(by 委員会での物理・技術成熟度・オリジナリティ等の再検討)。

→ この筋で、ヒッグス物理の深化、将来のエネルギー拡張性(+従来考えられていないmultiTeVまでも含めて)はもとより、全く違う実現方法の模索や産業応用等についても、自由度をもって柔軟に検討し、魅力的な20-30年後のシナリオを描きたい。

Investigating possible “alternative” or “modified” way to realize an e+e- (linear) collider in Japan

→ Sakashita-san's talk later afternoon

(今朝の寄田さんのスライド) p7/29

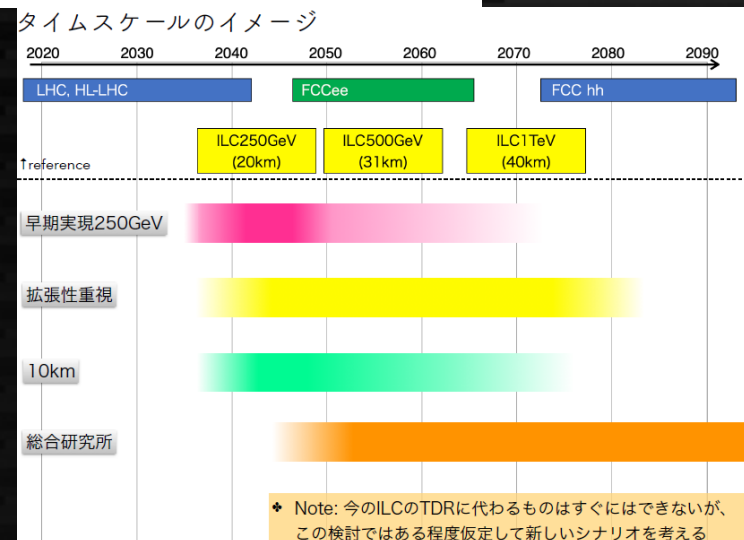
今期の将来計画委員会のミッション

- 高エネルギー委員会からのお返し
 - > 次世代線形コライダー実験 ~「ILCの強化」と「ILCではない将来の創造」~
 - ① ILC多角型化: ILCの基盤加速技術の応用、新しい仲間作り、価値の強化
 - ② 高圧配線: 高勾配加速器の現状と技術開発(ILC高度化と③次世代に関連)
 - ③ 次世代実験: ILCが出来ない場合の日本の基幹将来計画とその基盤になる技術
 - > 量子技術、AI、検出器技術の先導化 ~10年後にあるべき技術とHEPの方向性~
- ★ ミッション: まずは、次期基幹計画を「選定」したり、方向性を「決断」するのではなく、
 1. 大所高所から加速器実験の価値や在り方を検証し、強化深化させること
 2. 物理と技術の観点で“フラット”に検討し、将来基幹計画を立案し、提案すること
- 今回は、将来計画委員会答申(2017年石野委員会)の更新はなし
上記項目に関する提言書(報告書)を作成、2023年秋に高エネルギー委員長に提出
→ 次期将来計画委員会(2023-2025年)の答申更新の際の「入力」として活用してもらう。

具体的なシナリオ案の例

- 「早期実現250GeV」
とにかく250GeVを早くスタートさせる(HL-LHCと同じ時期に実験する)シナリオ
- 「拡張性重視」
(250GeVからスタートさせて) 3TeV程度あるいはそれ以上を、50kmまで拡張可能、とするシナリオ
- 「10km」
トンネル長を10kmで描けるシナリオ
- 「総合研究所」
電子加速器総合研究所(電子加速器の産業応用、物性、生物、、、)を作り、その一部が電子陽電子コライダー実験とするシナリオ
- その他

Sakashita-san's slides at CFP town-hall meeting in March



Today's agenda

13:00 → 15:45 Main session

13:00 Introduction

Speaker: Taikan Suehara (Kyushu University)

13:10 Snowmass ILC paper review: summary of physics performance

Speakers: Masaya Ishino (University of Tokyo (JP)), Takuya Nobe (University of Tokyo), Junping Tian (University of Tokyo), Taikan Suehara (Kyushu University)

13:40 Snowmass ILC paper review: drawing overall picture

Speakers: Junping Tian (University of Tokyo), Koji TSUMURA (Kyushu University)

14:10 Discussion: killer science of ILC250 and beyond

14:40 Review on the discussion of e+e- project In JAHEP-CFP

Speaker: Ken Sakashita (KEK)

15:10 General discussion

16:00 → 18:00 Session of ongoing studies

16:00 Machine learning: particle flow with GNN

Speaker: Taikan Suehara (Kyushu University)

16:20 Machine learning: quark flavor tagging with Particle Transformer

Speakers: Taikan Suehara (Kyushu University), Lai Gui (Imperial College London)

16:40 Physics: two-fermion study for Z' search

Speaker: Koushi Nagae (Kyushu University)

17:00 Physics: tau-pair study

Speaker: Mr Keita Yumino (SOKENDAI)

17:20 Physics: study of heavy neutral leptons

Speaker: Jurina Nakajima (SOKENDAI/KEK)

LCWS2024 in Tokyo

International Workshop on Future Linear Colliders, LCWS2024

8–11 Jul 2023
The University of Tokyo
Asia/Tokyo timezone

Enter your search term 

Overview


Timetable



The 2024 International Workshop on Future Linear Colliders (LCWS2024) continues the series devoted to the study of the physics, detectors, and accelerator issues relating to high-energy linear electron-positron colliders. A linear collider will initially operate as a Higgs factory, and provides a clear path for upgrades in energy and luminosity.

Since the last workshop (LCWS2023), many significant steps have been made. With a wide program of plenary and parallel sessions, this workshop will provide an opportunity to present ongoing work and to get informed and involved.

The workshop is scheduled from the morning of 8th of July to the late afternoon of 11th of July. We plan to have an evening reception on the 8th, and a conference dinner on the 10th. The workshop will be held at the University of Tokyo (Hongo and/or Yayoi campus), located in the heart of Tokyo.

 **Starts** 8 Jul 2023, 08:00
Ends 11 Jul 2023, 20:00
Asia/Tokyo

 The University of Tokyo

 There are no materials yet. 

July 8-11, 2024
at the University of Tokyo
Details to be announced

Please be prepared!