

IDT-WG2 report

Shin MICHIZONO (KEK/IDT-WG2)

(Nov. 30, 2021)

-ILC advisory panel on Nov.29 (4th panel meeting)

The minutes of the 2nd and 3rd meetings are also available.

https://www.mext.go.jp/b_menu/shingi/chousa/shinkou/064/giji_list/index.htm

ILC advisory panel on Nov.29

https://www.mext.go.jp/b_menu/shingi/chousa/shinkou/064/giji_list/index.htm

● 国際リニアコライダー(ILC)に関する有識者会議(第2期 第4回)の開催について

令和3年11月22日
文部科学省

1. 日時

令和3年11月29日(月曜日)15時00分～17時00分

2. 議題

- (1) 追加質問について
- (2) 欧米の最新の動向について
- (3) 全体を通じた議論
- (4) その他

Agenda:

- (1) Additional questions
- (2) Latest trends in Europe and the United States
- (3) Discussion throughout the session
- (4) Others

3. 開催形態

オンライン開催

There are various discussion.

(I hope some preliminary report will be provided soon.)

4. 傍聴・取材

Next panel will be announced later (not decided now).

・傍聴を希望される方は、令和3年11月26日(金曜日)正午までに、下記URLより傍聴登録をお願いします。登録されたメールアドレスに、会議開催前までに会議視聴情報をお送りします。

(傍聴登録受付URL) [国際リニアコライダー\(ILC\)に関する有識者会議\(第2期第4回\)傍聴予約登録](#)

・会議資料は、会議当日までに当省ウェブサイトに掲載します。

会議資料ページへリンク

■ [会議資料](#)

(1) Additional questions

Material: https://www.mext.go.jp/kaigisiryō/content/20211129-mxt_kiso-000019181_2.pdf (in Japanese)
(total 30 pages document)

- There were additional questions from the committee members about our presentations so far, and we prepared answers to them.
- Although this is a list of questions from the committee members and there is a lot of overlap with the previous explanations, we have explained them again for their understanding.
- Prof. Asai (ILC Japan) explained for 15 minutes, and there were about 50 minutes of Q&A.
- The presenters from the previous sessions answered the questions. (Shoji Asai (mainly), Hitoshi Murayama, Tatsuya Nakada, Shin Michizono, etc.)

(2) Latest trends in Europe and the United States

Material: https://www.mext.go.jp/kaigisiryō/content/20211129-mxt_kiso-000019181_3.pdf (in Japanese/English)

資料 2 参考資料

Summary of the Exchange of opinions between MESRI/BMBF/BEIS/STFC/DOE and MEXT related to ILC

1. Date: October 15th, 2021
 2. Venue: online video conference (Webex)
 3. Participants
MEXT (Japan), MESRI (France), BMBF (Germany), BEIS (UK), STFC (UK), DOE (US)
 4. Meeting summary
 - (1) Participating countries' situations and positions related to the ILC project
 - The participants explained their countries' situations and shared understanding of the position of each country related to the ILC project.
- [Japan]
- ✓ MEXT described recent status of the ILC project, update after the latest exchange of information (during years 2020 and 2021), which included the Science Council of Japan (SCJ) publishing its Master Plan 2020 but the ILC was not selected as a priority large-scale research project, and MEXT formulating its Roadmap 2020, where the ILC community withdrew the project application in March 2020.
 - ✓ MEXT restarted the review of the ILC Advisory Panel based on the IDT's proposal and Japanese ILC community report related to ILC project, considering recent discussions on large-scale research projects in Japan. Tight financial situation and difficulty in decoupling the ILC pre-laboratory, which includes site issues, from the entire ILC construction project are also matters for serious consideration.
 - ✓ As MEXT's Minister explained in the Diet session, under the current situation that the perspective of broad internal and external cooperation for the ILC project itself as well as its pre-laboratory is not promised, it is difficult to obtain the Japanese citizens' understanding for investing in the pre-laboratory. Various challenges such as international cost sharing, technical feasibility, and the understanding of the citizens including the researchers community remains to be addressed.
 - ✓ Japan recognizes that it is appropriate to continue discussions regarding the ILC project between administrative officials of the relevant countries at the right time, as well as to pay attention to researchers' efforts to deal with the remaining challenges.
- [France]
- ✓ The French national roadmap for research infrastructure is currently being renewed for publication in the first half of 2022, after a one-year long consultation with national stakeholders. Although the new French national roadmap will be published in several months, it is already known the ILC project will not be part of it. Moreover, ILC will not be part of the European projects/landmarks in the new ESFRI 2021 roadmap either.
 - ✓ In terms of financial capacity, France is facing difficult challenges related to various international projects which France has already committed to, including extra costs due to

construction delays, consequences of the COVID crisis, rising energy prices and so on. So, the financial capacity is very limited. At this stage, no funding is considered for the ILC project.

- ✓ More generally speaking, the French strategy on High Energy Physics has taken into account the recent update of the European Strategy for Particle Physics and its call for a Higgs factory as a next step. That said, France is on a prudent stance on the FCC project and will pay attention to the results of its feasibility study. France underlines that at this stage, given the number of proposed Higgs-factory projects, discussions in a global context need to be pursued to be able to move forward.

[Germany]

- ✓ Germany recognizes the scientific potential of the ILC project, in the German science community there is interest and cooperation for long years of several groups and institutions.
- ✓ For further discussion of the ILC project including the pre-laboratory, more clarification of the cost aspect of the ILC project is necessary. In the federal Budget in Germany, there is very little financial margin due to prioritized national projects with various financial needs.
- ✓ Germany has a national roadmap review process that is just starting next year, and expects to publish its result in 2024. If a significant German share to the investment in ILC project is expected, it must become a part of the roadmap.
- ✓ As long as the host country does not prioritize ILC project, it is difficult to give national priority for the ILC project in Germany.

[UK]

- ✓ The UK prioritizes existing projects, including the LHC and the HL-LHC based on the Update of the European Strategy for Particle Physics.
- ✓ Like any other country, the UK's budget is very tight due to COVID crisis. The UK has the budget review process next month to set government budget for next three years. Clear statement from Japan that Japan moves forward with the ILC project would be helpful for the UK.
- ✓ The UK national roadmap, which contains various field projects, is being revised. Although the UK might participate in the ILC project in the future, at this moment, it is very hard to discuss it under the current roadmap.

[US]

- ✓ The 2014 US Particle Physics Project Prioritization Panel (P5) Strategic Plan recognizes the strong scientific and technological importance of the ILC project.
- ✓ As already expressed by the US to Japan, the US continues to be supportive for a Japanese initiative to advance the ILC project to its pre-laboratory phase. Further discussions on many critical issues, including international financial contributions for the ILC project, can be conducted during the pre-laboratory phase.
- ✓ Any value of the contributions is connected to the technical scope. In order to further discuss details of the US contributions to the ILC project as well as to advance the project under the US Government budget processes, it is necessary to begin the pre-laboratory process which

requires global participation and is led by a host country.

- ✓ Responding to the US presentation, Japan indicated that it is difficult to proceed with the US proposal to begin the pre-laboratory process due to challenges earlier identified by MEXT.
- ✓ To conduct intergovernmental discussions, two types of structures can be considered: (1) the organizational framework provided by the IDT proposal or, (2) as an example, an interim council consisting of government members with an organization that includes management & finance and technical R&D support existing directly below a council. Intergovernmental discussions should be conducted in-parallel with discussion and activities among scientists.
- ✓ Responding to France's inquiry, the US noted that activities with CERN already have existed for the past several years and continue, including the technical R&D for the FCC accelerator. DOE is also now engaging with CERN to explore potential contributions to the tunnel excavation for the FCC. DOE also noted that its engagement activities with CERN on the FCC is different than with Japan on the ILC where regular discussions have continued with CERN while more engagement with Japan is needed if the ILC were to move forward in Japan.

(2) Future processes

- Japan will provide information on the report of the MEXT's ILC Advisory Panel in due course.
- The participants confirmed that it is important to continue exchanging opinions at appropriate times.

Please check by yourself.

(3) Discussion throughout the session

Material: https://www.mext.go.jp/kaigisiryō/content/20211129-mxt_kiso-000019181_4.pdf (in Japanese)

https://www.mext.go.jp/kaigisiryō/content/20211129-mxt_kiso-000019181_5.pdf (in Japanese)

資料 4

本日も議論いただきたいポイント

(1) ILC 計画に関してこれまで議論されてきた論点

- ① 国際的な研究協力及び費用分担の見通し
諸外国政府の協力の見通しについて進展は認められるか。
- ② 学術的意義や国民及び科学コミュニティの理解
学術的意義について変化はあるか、明確にされているか。
科学コミュニティの理解、国民の広い理解・支持について進展は認められるか。
- ③ 技術的成立性の明確化及びコスト見積もりの妥当性
技術的成立性について新たな知見が得られているか、見通しについて進展は認められるか。
- ④ その他
上記以外の課題についての進展は認められるか。

(2) 準備研究所の提案書に対する考え方

サイト誘致との関係や国際協力の見通し、関係各国内の検討状況などを踏まえ、準備研究所提案書に示された ILC 計画の進め方は妥当なものと考えられるか。

(3) 全体を通して

以上より、前回報告書からの約 3 年間の ILC 計画の進捗をどう評価するか。また、国内外の素粒子物理戦略、大規模学術研究プロジェクトと ILC 計画との関係についてはどのように考えていくべきか。

Points to be discussed today

(Translation by DeepL)

(1) Issues that have been discussed so far regarding the ILC project

- Prospects for international research cooperation and cost sharing
Is there any progress in the prospects for cooperation by foreign governments?
- Academic significance and understanding by the public and scientific community
Are there any changes in the scientific significance of the project, and has it been clarified?
Understanding of the scientific community and broad public understanding and support
- Clarification of technical feasibility and validity of cost estimates
Clarification of technical feasibility and appropriateness of cost estimate: Have new findings been obtained regarding technical feasibility, and has progress been made regarding the outlook?
- Others
Has any progress been made on issues other than the above?

(2) Views on the proposal of the Pre-lab

In light of the relationship with site attraction, the prospects for international cooperation, and the status of discussions within the countries concerned, is the way forward for the ILC project proposed in the Preparatory Research Institute considered appropriate?

(3) Overall

Based on the above, how do you evaluate the progress of the ILC project over the past three years since the last report? In addition, how should we think about the relationship between the ILC project and domestic and international particle physics strategies and large-scale academic research projects?

From Tohoku local newspaper

<https://www.iwate-np.co.jp/article/2021/11/30/106158>

2021.11.30

[シェア](#) [ツイート](#) [LINEで送る](#)

ＩＬＣ準備研関連費など説明 文科省有識者会議

【東京支社】文部科学省の国際リニアコライダー（ＩＬＣ）に関する第２期有識者会議（座長・観山（みやま）正見岐阜聖徳学園大学長、委員１４人）は２９日、第４回会合をオンラインで開いた。研究者がＩＬＣ準備研究所の関連費用などを説明。同省はＩＬＣに対する欧米各国の最新動向を示した。

全委員が参加。東京大素粒子物理国際研究センターの浅井祥仁センター長は、準備研究所で手掛ける超伝導加速空洞の開発費について「欧州、米国の研究所がそれぞれ数年で１５億円程度準備できるとしている。日本は検査システムなどのインフラを含め５０億円ほど必要になる」と述べた。

同省の坂本修一審議官は１０月の米国、英国、フランス、ドイツとの意見交換の結果を説明。ドイツは「コスト面のより明確な情報が必要」、米国は「日本の誘致表明を前提に、準備研究所段階に進むことを引き続き支持する」との姿勢を示したという。

委員からは「超伝導加速空洞の共同開発でどれだけ政府間協議を進めやすくなるのか」「日本が覚悟を決めないで欧米もついてこない。研究者にも日本が率先してやらない限り実現しないという気構えがもっと必要だ」などの意見が出た。

有識者会議は次回から意見の取りまとめに入り、年度内に政府に示す方針だ。

Prof. Shoji Asai commented on the development cost of the SRF to be worked on at the Pre-lab, saying, "Laboratories in Europe and the United States can prepare about 1.5 billion yen in a few years each. Japan will need about 5 billion yen, including infrastructure such as an inspection system".

Shuichi Sakamoto, deputy director general of the ministry, explained the results of the exchange of opinions with USA, UK France and Germany in October. Germany said it needed clearer information on costs, while the U.S. said it would continue to support the move to the Pre-lab stage on the premise of Japan's announcement to invite the project.

The committee members asked “how much the joint development of the SRF cavity would facilitate intergovernmental talks”, “If Japan doesn't make up its mind, Europe and the United States won't follow suit, and researchers need to be more prepared to believe that unless Japan takes the initiative, the project won't be realized.”

The expert panel will begin compiling its opinions from the next meeting, and plans to present them to the government by the end of the fiscal year.