

Status in Japan

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- Recent developments in the ILC project
- Activities in Japan following the ICFA statement
- Promotion of the ILC this year

- R&D for a future e+e- linear collider was started more than 20 years ago in three regions.
- By early 2000's , it became a consensus among the world HEP community that an e+e- linear collider with the CM energy of about 500 GeV should be the next collider beyond the LHC.
- ICFA chose the cold technology for LC as a global project in 2004, and set up a global team (GDE) for design and coordination of R&D for the ILC.
- After eight years of works, the TDR of the ILC was published in June 2013. ICFA set up the Linear Collider Collaboration for engineering design phase.
- Higgs boson discovery at CERN in the summer of 2012.
- The Japanese HEP community (JAHEP) proposed to host the ILC in Japan. The proposal was welcomed by international HEP communities.

[The European Strategy for Particle Physics Update 2013,](#)

[ACFA/AsiaHEP Statement on the ILC \(September 2013\)](#)

[US P5 report \(May 2014\)](#)

[ICFA statements \(January and July 2014\)](#)

- In reply to the request from MEXT, Science Council of Japan sent “Remarks on the International Linear Collider Project” on September 2013, and recommended **the investigation of various issues to determine the possibility of hosting the ILC.**
- MEXT set up ILC Advisory Panel in May, 2014.
- ILC Advisory Panel produced three reports up to now.
 - “Summary of ILC Advisory Panel’s Discussions to Day” (June, 2015)
http://www.mext.go.jp/component/b_menu/shingi/toushin/_icsFiles/afieldfile/2015/08/05/1360596_3.pdf => **Physics and TDR validation**
 - “Report on Measures to Secure and Develop **Human Resources** for the ILC” (July 2016)
http://www.mext.go.jp/component/b_menu/shingi/toushin/_icsFiles/afieldfile/2016/08/29/1374377_2.pdf
 - “ILC Advisory Panel Report on **ILC Organization and Management**” (July 2017)
http://www.mext.go.jp/component/b_menu/shingi/toushin/_icsFiles/afieldfile/2017/11/17/1393957_02_1.pdf

1st survey of technological
spin-offs and Research trends (FY2014)

2nd survey of technology issues
(FY2015)

3rd survey of large international projects
(FY2016)

MEXT

Under ILC TF headed by
State Minister of MEXT

Research contract

ILC Advisory Panel

Established in May 2014

Established
in June 2014

Established
in June 2014

Established
in Nov. 2015

Established
in Feb 2017

**Particle and Nuclear
Physics WG**

**TDR Validation
WG**

**Human Resources
WG**

**Organization and
Management
Verification WG**

Recommendation 1: **Share the cost internationally** and **Find a clear vision on the discovery potential of new particles.**

Recommendation 2: **Closely monitor and analyze the development of the LHC experiments** and **Mitigate cost risk.**

Recommendation 3: **Obtain general understanding by the public and science communities.**

=>Revisit the physics case after the LHC Run II

=> Control the cost.

- In LCWS 2016, Morioka, November 2016, we agreed to start considering a staging scenario of the ILC seriously.
- LCC studied [physics at 250 GeV ILC](#) and [its technical and cost issues](#) and published their reports (available in ArXive).
- In July 2017, the Japanese HEP community (JAHEP) released a statement : [“Scientific Significance of ILC and Proposal of its Early Realization in light of the Outcomes of LHC Run 2 “](#) based on its subcommittee’s report on the scientific significance of the 250GeV ILC . <http://www.jahep.org/files/JAHEP-ILCstatement-170816-EN.pdf>
- These reports were informed to LCB. LCB and ICFA released their conclusions and statement supporting 250 GeV ILC.

“ICFA thus supports the conclusions of the Linear Collider Board (LCB) in their report presented at this meeting and very strongly encourages Japan to realize the ILC in a timely fashion as a Higgs boson factory with a center-of-mass energy of 250 GeV as an international project, led by Japanese initiative.”

The 8th Meeting on December 5, 2017

- Report on the revised plan of the ILC by Tastuya Nakada, LCB Chair
- Report on the status of the LHC experiment by Eckhard Elsen (CERN)
- The panel decided to reconvene the Physics and TDR validation WGs to validate physics and technical/cost issues of the 250 GeV ILC plan.

Two working groups intensively studied the new plan of the ILC 250 GeV from January to May, and completed their reports to be submitted to the 9th Meeting.

The 9th Meeting will be held on May 31 2018 **Tomorrow !**

The further schedule will be shown tomorrow.

The conclusion of the panel may be examined by the Science Council of Japan.

- The SCJ report in 2013 also recommended to **have discussions with the research institutes and the responsible funding authorities of key countries.**
- The DOE-MEXT discussion group was set up in May 2016. The US-Japan joint R&D on the ILC cost reduction was started in 2017.
 - “**Mitigate cost risk**” (ILC Advisory Panel’s report in 2015)
Taken into account in **the LCC’s cost estimation for 250GeV ILC** in 2017
- Visit to Europe
 - A Japanese delegation consisting of Diet members, a government official, representatives from the industrial sector, and researchers visited Europe early January 2018 to discuss cooperation on the ILC project. Counterparts to Japanese representatives at each level was identified in France and Germany.

- **“Obtain general understanding by the public and science communities”** (ILC Advisory Panel’s report in 2015) is very important in Japan.
- The KEK Planning Office for the ILC has been promoting various activities:
 - ✓ Published a KEK ILC booklet (in Japanese) :KEK Progress report 2017-13
 - ✓ Organize symposium in Atomic Energy Society of Japan (Sept.2017), the Japan Society of Applied Physics (March 2018) in addition to regular symposium in the Physical Society of Japan.
 - ✓ Organize many public lectures and events.
 - ✓ Fundraising for the ILC promotion.

https://www2.kek.jp/ilc/ja/contents/contribution/index_en.html



KEK 東京大学 高エネルギー加速器研究センター
東京大学 素粒子物理学研究センター
The University of Tokyo

High Energy Accelerator Research Organization (KEK),
Linear Collider Collaboration (LCC) and
International Center for Elementary Particle Physics (ICEPP)
cordially invite you to the symposium on:

**“The Superconducting RF Technology
for the International Linear Collider”**

Monday, June 25th, 2018 at 10:00

Fukutake Learning Theater, University of Tokyo
(7-3-1 Hongo, Bunkyo-ku, Tokyo 113-0033)
<http://fukutake.ill.u-tokyo.ac.jp/english/access.html>

Please register at http://www-conf.kek.jp/SRF_for_ILC/

Language: English and Japanese
with bi-directional simultaneous interpretation for the morning session

Poster of LCC © Hayashi/KEK
Superconducting RF cavity © Fermilab

International symposium
on the SCRF Technology
for the ILC (June 25, 2018)
Invite journalists, science
attaches in embassies.



The ILC symposium at JSAP in March 17, 2018,
Attended by more than 300 .

- It is well understood that the next half a year is the critical time for realizing the ILC in Japan.
- There are many organizations in Japan supporting the promotion of the ILC.

Federation of Diet members for ILC

AAA (Advanced Accelerator Association)

Tohoku ILC Promotion Council

- Together with these sectors, we are focusing on promoting the ILC in this critical time.
- KEK and AAA recently have agreed to strengthen cooperation through the KEK Planning Office for the ILC.

- The next half a year is a critical time for realizing the ILC in Japan.
- We need to work together to push the project in various ways coherently.
 - ✓ Stand behind the 250 GeV ILC plan as a worldwide HEP community
 - ✓ Make the ILC Advisory Panel in MEXT/ Science Council of Japan (SCJ) understand the importance of the project for a positive outcome
 - ✓ Cooperate with Federation of Diet members, the industrial sector (AAA), local sectors to promote the project
 - ✓ Obtain general understanding by the public and scientific communities
 - ✓ Facilitate discussions between governments and funding agencies. This could go in parallel with the process of the ILC Advisory Panel/SCJ