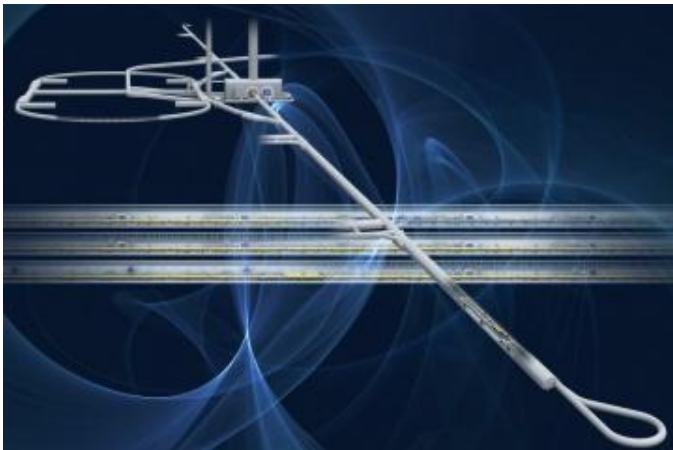


DIRECTOR'S CORNER

A team effort for a new collider

by Tatsuya Nakada



Tatsuya Nakada, freshly appointed chair of the newly founded ILC International Development Team, gives his view on the next 18 months in which the IDT will prepare for a Pre-Lab. It's an ambitious plan, he says, but the overall atmosphere of the Team is very positive.

AROUND THE WORLD

Americas Workshop on Linear Collider Planned for October

by Jim Brau



The first virtual Linear Collider Workshop will be held in October. A rich programme responding to and preparing for recent developments will hopefully draw many interested national and international participants, says an organiser. The workshop will work to build the Americas community engaged

FEATURE

ICFA and the ILC's International Development Team

by Geoffrey Taylor



Geoffrey Taylor, the current chair of the International Committee for Future Accelerators ICFA, explains why ICFA has set up the International Development Team (IDT) and what it will do.

FEATURE

ICFA Press Release: ICFA appoints members for the ILC International Development Team



The International Committee for Future Accelerators announced the structure and the team members of the ILC International Development Team, to make the project one step forward.

in the ILC and to motivate ILC contributions to Snowmass
2021. Register now!

IN THE NEWS

from *Iwate Nippo*

25 September 2020

コロナ後の成長を展望 県 I L C 推進協講演会、最新動向を共有

県ILC推進協議会は24日、国内誘致の実現に向け講演会を開いた。研究者らは国内誘致を巡る世界の最新動向を説明。宇宙創成の謎に迫る科学的意義のほか、新型コロナウイルス感染症で分断が進む国際社会の共生、コロナ終息後の日本の成長につながる重要性を確認した。

from *Nikkei*

24 September 2020

岩手県商議所連、知事にコロナ禍の産業支援など要望

また、「主要プロジェクト」では、北上山地が建設候補地の一つとなっている巨大加速器「国際リニアコライダー（ILC）」を指摘。国が海外に向けて建設に向けた意思表明をするように強く働きかけることも重ねて要望した。

from *MEXT*

11 September 2020

萩生田光一文部科学大臣記者会見

記者)
大型加速器ILCに関してお聞きします。8日に、高エネルギー研究機構が、国の大型研究ロードマップにILCへの申請を取り下げたという発表がありました。これ、今まで文科省がずっと議論されてきた内容だと思っんですけども、このことの受止めと、今後の取組について教えてください。

大臣)
高エネルギー加速器研究機構が、「学術研究の大型プロジェクトの推進に関する基本構想ロードマップ」への申請を取り下げたというのは事実でございますが、申請の取下げ理由はですね、本年2月にILCに関する国際会議での声明において、ILCに関する国際協力体制などの推進の枠組みを再構築することとなり、その内容を踏まえ、申請内容を見直す必要が生じたためだと伺っております。文科省としては、米欧の政府機関との意見交換を行いつつ、国際研究者コミュニティによる議論を注視してまいりたいと思っております。

from *Kahoku Shinpo*

11 September 2020

自民総裁選 石破・岸田氏が宮城、福島入り 菅氏、宮城県議らとオンライン意見交換

菅氏は(中略) 岩手、宮城両県にまたがる北上山地が候補地の超大型加速器「国際リニアコライダー（ILC）」の誘致にも言及。欧州各国との調整など実現への課題を挙げつつ、「強い要望は承知している。状況を踏まえて対応したい」と述べた。

from *Open Access Government*

10 September 2020

Future machines to explore new frontiers in particle physics

To realise this vision, DOE supports the R&D of accelerator and detector technologies to enable Japan to move forward with the International Linear Collider (ILC). Our scientists are developing improvements to the superconducting technology that will increase accelerator cavity efficiency and reduce the cost of construction and subsequent operations

from *Physics Today*

01 September 2020

Particle physicists hash out long-term strategy for Europe

Work started this summer on a final ILC engineering design. In parallel, Okada expects Japan's Ministry of Education, Culture, Sports, Science, and Technology "to intensify discussions with other countries." The ILC could start operations in the mid 2030s, he says. That would have the advantage of overlapping with the high-luminosity LHC, which is expected to start up in 2027 and run through the end of the next decade.

from *Physics Central*

18 August 2020

On the Particle Physics Horizon, a New Supercollider Comes Into Focus

Meanwhile, CERN's participation in the proposed International Linear Collider—which will potentially be hosted by Japan—remains a possibility, and this decade will see the unveiling of the High-Luminosity LHC, a major upgrade that's currently in progress at the particle physics lab.

from *Nikkei*

7 August 2020

ILC誘致へ推進センター設立

次世代加速器「国際リニアコライダー（ILC）」について、岩手県と宮城県にまたがる北上山地への誘致を目指す地元自治体や大学などの関係機関は6日、東北ILC事業推進センターを設立した。岩手県立大学内に拠点を設け、センター長には同大学の鈴木厚人学長が就いた。

from *Iwate Nippo*

6 August 2020

ILC国際推進チーム始動 KEKを活動拠点に

国際リニアコライダー（ILC）実現に向け国際推進チームが始動した。高エネルギー加速器研究機構（KEK、茨城県つくば市）を活動拠点とし、2021年末までにILC準備研究所の組織・運営体制を整備し、実験装置の技術をさらに高めるのが主な

任務。プロジェクトは本格的な準備段階に移行する。

from Kensetsunews.com

30 July 2020

受け入れ環境整備へ調査/ILC国内誘致が新ステージ/国際チームと自治体組織

国際協力による次世代の直線型加速器 I L C の東北・北上山地への誘致に向けた動きが新たなステージに移行する。各国の加速器研究所所長らで構成する I C F A が、茨城県つくば市にある K E K を活動拠点とする国際推進チームを 8 月にも発足させる。この動きに合わせて、建設候補地となる岩手県や地元市町村などが同上旬に新組織を創設。国際チームと連携しながら、I L C 受け入れに必要な社会インフラやまちづくりなどの環境を整備するための調査・検討を進める予定だ。

from Nikkei Asian Review

19 July 2020

In US-China tech race, Japan feels heat to host next supercollider

In its updated strategy for particle physics in Europe released last month, the European particle physics laboratory, CERN, said the “timely realization” of the ILC in Japan would be compatible with its plans and that “the European particle physics community would wish to collaborate.”

from Nikkei

16 July 2020

先端科学 中国先行に危惧

建設候補地となっている日本の政府はILC誘致に対する態度をまだ明確にしていない。実際に建設となれば、米欧よりも多額を背負わされる可能性もある。1月に竹本直一科学技術相が閣議後の会見で「しっかり前向きに検討すべきだ」と発言したが、誘致表明には至っていない。

from Nikkei

15 July 2020

欧米が日本に迫る次世代加速器 中国と先陣競う

宇宙の謎に迫ると期待される次世代加速器「国際リニアコライダー（ILC）」について、欧米から日本での建設を求める声が強まっている。背景にあるのは、先端的な科学技術分野でも存在感を増す中国との激しい先陣争いだ。日本政府は巨額の資金負担を懸念して態度を明確にしてこなかったが、どうするのか決断を迫られつつある。

from WIENER ZEITUNG

12 July 2020

Die Teilchen-Fabrik, die zum Ursprung führt

Die Form der Umsetzung ist noch nicht ganz klar. Seit etlichen Jahren gibt es in Japan das Projekt International Linear Collider (ILC). Die Technik wurde in Europa mitentwickelt und der ILC ist Teil der europäischen Kern- und Teilchenphysik.

from Physics

2 July 2020

Europeans Decide on Particle Strategy

Precision measurements of Higgs physics can be done with an electron-positron collider, but the exact design of such a Higgs factory is still undecided. The International Linear Collider (ILC) is one option, but the proposed host, Japan, has not yet committed to the project.

from CNRS le Journal

30 June 2020

Quel successeur pour le LHC ?

(...) le Japon parle depuis plusieurs années déjà de construire sa propre usine à Higgs. « Ce projet nommé ILC (pour International linear collider), c'est un peu l'arlésienne, commente Laurent Vacavant. Mais s'il se fait, Clic deviendrait de facto caduc, et les scientifiques européens participeraient alors à la fabrication des détecteurs de l'instrument japonais. »

from Industries et Technologies

23 June 2020

Aimants surpuissants et accélération efficace : les défis de la stratégie du Cern pour ses futures machines

“Pour l'« usine à Higgs », l'enjeu est principalement d'améliorer l'efficacité de l'accélération des électrons qui se produit dans des cavités résonnantes – ou cavités accélératrices. (...) Pour les machines linéaires, l'objectif est de limiter la longueur du dispositif. ”

ANNOUNCEMENTS

Back on the (news) line

Dear readers,

It's been a while since you've received the last issue of NewsLine. With the recent changes in organisation of the linear collider planning effort as well as in the community, we're back with a slightly new look and the goal to keep you updated regularly on the latest developments regarding the International Linear Collider. Read all about the new management and their goals in this issue, sign up for the Americas Workshop on Linear Colliders and send us info and pictures on what you've been working on for future issues of ILC NewsLine.

...[Read more](#)

PREPRINTS

PREPRINTS

2009.05848

Search for the anomalous $WW\gamma$ couplings through the process $e^-e^+\rightarrow\text{vev}^-e\gamma$ at ILC with unpolarized and polarize beams

2008.04298

Probing New Physics in Dimension-8 Neutral Gauge Couplings at e^+e^- Colliders

2009.04340

Prospects of measuring the branching fraction of the Higgs boson decaying into muon pairs at the International Linear Collider

2009.03250

One-loop radiative corrections to $e^+e^-\rightarrow Z h_0/H_0 A_0$ in the Inert Higgs Doublet Model

2009.01023

The Very Big ILC

2008.13621

Effective Field Theory approach to lepto-philic self conjugate dark matter

2007.03650

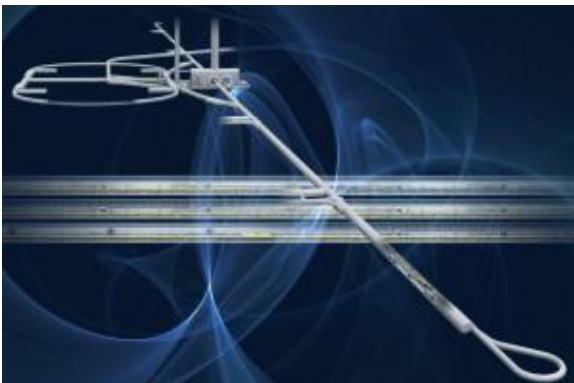
ILC Study Questions for Snowmass 2021

2008.03261

The Cabibbo anomaly versus electroweak precision tests — an exploration of extensions of the Standard Model

A team effort for a new collider

Tatsuya Nakada | [25 September 2020](#)



The main goal for the next month is to prepare for the ILC Pre-lab. Image: Rey.Hori

After seven years of work, the Linear Collider Board (LCB) and Linear Collider Collaboration (LCC), which were established by the International Committee for Future Accelerators (ICFA) completed their term in June 2020. Taking into account the recent increase of political support in Japan for the ILC, ICFA concluded that the ILC project should take a step towards the preparatory phase for a future ILC laboratory. To help this move, ICFA established the ILC International Development Team (ILC-IDT) whose mandate is to prepare for the creation of the ILC Pre-laboratory. Unlike LCB and LCC who were promoting a linear collider in general, the ILC-IDT focuses on the ILC with Japan as the host country.

There is a clear pressure from the high-energy physics community to move fast. The recent update of [the European Strategy for Particle Physics](#) has underlined the European interest to collaborate with ILC if it were realised in a

timely fashion. The goal of the IDT is to complete the preparation for the ILC Pre-laboratory in a timescale of 1.5 to two years, which is extremely ambitious. There is a lot of work to be done: making a proposal for the organisation and governance of the Pre-laboratory, establishing a scheme where the national and regional laboratories worldwide can contribute to the work during the Pre-laboratory phase so that all the technical specifications for the ILC project being completed and ready for the construction phase, and much more. However, the members of the ILC-IDT Executive Board, who took office in August, are very motivated to tackle this challenge with a support from KEK who is hosting the ILC-IDT. In parallel to our activities, we hope that the effort by the Japanese colleagues will result in a positive move by the Japanese government that is equally essential for establishing the Pre-laboratory.

Lastly, I would like to express our sincere and deepest appreciation to the members of LCB and LCC, in particular the LCC Director, Lyn Evans and his management team as well as the first Chair of LCB, Sachio Komamiya, for their long lasting effort which made it possible to make this new step.

About the author: Tatsuya Nakada is Professor Emeritus at EPFL in Lausanne and the first spokesperson of the LHCb experiment at CERN. Born in Japan, he has been in Europe since 1978, mostly in Switzerland working for SIN/PSI, the University of Lausanne, CERN and EPFL, as well as for teaching assignment at the University of Fribourg and ETHZ. He has also been serving for the European particle physics community as a former Chair of ECFA, the last Scientific Secretary for the European Strategy Session of the CERN Council and former Chair of the Scientific Policy Committee of CERN.

[ICFA](#) | [IDT](#) | [ILC](#) | [JAPAN](#) | [KEK](#) | [PRE-LAB](#)

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FEATURE

ICFA and the ILC's International Development Team

[Geoffrey Taylor](#) | [25 September 2020](#)

Until the end of its mandate in June 2020 the Linear Collider Board (LCB) had been operating under the auspices of ICFA to study options for a future linear collider. To build upon the work of the LCB, ICFA has taken a major step to focus on requirements to establish an ILC “Pre-Lab” in Japan by setting up the International Development Team. This team has the mandate to pave the way for an organisation that would be the precursor to an official ILC laboratory.

In recent years, momentum has been building for Japan to host the ILC, with the support of international funding agencies and laboratories. High-level discussions have taken place between the US and Japan. There has also been government level discussion between European nations and Japan.

Furthermore, the recently released 2020 Update of the European Strategy for Particle Physics clearly stated the priority to focus on the high-luminosity (HL) LHC in the coming years whilst in the longer term nominating the development of a 100-kilometre circular collider, the FCC, as its key future facility. Importantly however, the update also stated, “the timely realisation of the electron-positron International Linear Collider (ILC) in Japan would be compatible with this strategy and, in that case, the European particle physics community would wish to collaborate.”

The operation of CERN's HL-LHC in parallel with the ILC would present a uniquely powerful infrastructure for studying the Higgs boson and beyond. The international community is working towards a timely realisation of the ILC.

Additionally, in its upcoming “Snowmass” process, the USA will give serious consideration to support developments required for the ILC.

With the encouragement these developments present, ICFA has moved to bring a clear focus to the essential next step on the path to making the ILC a reality.

ICFA recognised the imperative to develop a framework to facilitate transition to an ILC “preparatory phase” and has undertaken to establish of an international development team (IDT) to develop plans for an ILC Pre-Lab as a precursor to the construction of the ILC in Japan. The IDT has a mandate to complete its programme of work by the end of 2021.

The Team members:

- **Tatsuya Nakada** (EPFL), Chair–Executive Board and Working Group 1
- **Steinar Stapnes** (CERN), Regional Representative–Europe
- **Andy Lankford** (University of California, Irvine), Regional Representative–Americas
- **Geoffrey Taylor** (University of Melbourne), Regional Representative–Asia-Pacific
- **Shinichiro Michizono** (KEK), Chair–Working Group 2
- **Hitoshi Murayama** (University California Berkeley/ IPMU-University of Tokyo), Chair–Working Group 3
- **Yasuhiro Okada** (KEK), KEK Liaison



Organisational chart for the ILC International Development Team.

AROUND THE WORLD

Americas Workshop on Linear Collider Planned for October

[Jim Brau](#) | [25 September 2020](#)

Following the International Committee for Future Accelerator's August announcement of [the new phase toward preparation for the International Linear Collider](#) (ILC), the Americas Linear Collider Committee (ALCC chaired by Hugh Montgomery) has scheduled the next workshop on linear colliders, to be held virtually via Zoom. The Americas Workshop on Linear Colliders will be held in the week of 19 to 22 October and will work to build the Americas community engagement in the ILC and to motivate ILC contributions to Snowmass 2021.

The agenda will emphasise the current effort to realise a Pre-laboratory for the ILC, particularly the work toward this end led by the ILC International Development Team (IDT), recently created by ICFA. The ILC-IDT takes over leadership of the global effort from the Linear Collider Collaboration (LCC), that has led the community's work toward realising a linear collider since 2013.

A critical process of planning for high energy physics in the US is now underway, beginning with Snowmass 2021. Snowmass 2021 will be followed by the Particle Physics Project Prioritization Panel (P5) strategic planning process led by the Department of Energy and the National Science Foundation to prioritise the funding opportunities for US federal support for high-energy physics. During this period, the National Research Council will also conduct their survey of high energy physics which happens about once each decade. The 2014 P5 report is widely viewed as a critical element in motivating the US Congress to significantly increase funding for high-energy physics during the past several years. It is critical that the new P5 process lead to continued progress in US HEP funding, and that the work toward the ILC plays a strong role in the P5 plan.

The programme for AWLC 2020 is now being developed. The Program Committee is chaired by Andy White (The University of Texas at Arlington) and me. There are four days of plenary sessions planned for the afternoons Pacific Daylight Savings Time, along with parallel sessions in the mornings. The plenary sessions will begin on Monday with an overview of the physics of the ILC, recent developments, and the steps being taken to establish the ILC-IDT. The Monday programme will include reports on progress in other regions, including the recent update of the European Strategy for high-energy physics. Tuesday will concentrate on the global accelerator R&D programme. The physics requirements for ILC detectors will be presented on Wednesday, along with a variety of talks on specific detectors on tracking and calorimetry, as well as software and computing. Wednesday will finish with a discussion of ILC opportunities for early-career physicists.

The workshop will wrap up on Thursday, with a survey talk on the physics impact of the ILC on the landscape of new physics. The anticipated timeline for detector planning and construction will be discussed. Talks by US government representatives will provide an update on the perspective from Washington. Before adjourning, the workshop plans to close with a panel discussion including active ILC collaborators along with mid-career colleagues from outside the current ILC community.

The world-wide ILC community has followed a pattern for several years of two workshops annually, one the global LCWS series (including participation with CLIC colleagues) and a second regional workshop albeit with global participation. The last such workshop was LCWS 2019 in Sendai, Japan. The COVID19 pandemic interrupted the pattern in the spring when it would have been the turn for a regional meeting in the Americas, resulting in the delay to October, 2020. In the meantime, ICFA has met twice, at SLAC in February and during International Conference on High Energy Physics in August, creating the ILC-IDT.

SLAC hosts the workshop and Michael Peskin chairs the Local Organising Committee.

The workshop web site is <https://conf.slac.stanford.edu/awlc2020/>



The Americas Workshop on Linear Colliders will be held via Zoom from 19 to 22 October 2020.

We have planned an interesting and informative programme with excellent speakers covering the topics in physics, detectors, accelerators and the planning for the pre-lab. We encourage everyone interested in future opportunities in collider physics to register for the workshop and plan to join the online presentations.

[AWLC](#) | [IDT](#) | [SNOWMASS PROCESS](#) | [UNITED STATES](#)

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FEATURE

ICFA Press Release: ICFA appoints members for the ILC International Development Team

[25 September 2020](#)

The international effort to realise the next major particle collider, the International Linear Collider (ILC), has a new team to lead the project. Today the International Committee for Future Accelerators (ICFA) announced the structure and the team members of the ILC International Development Team (ILC-IDT).

On 2 August, ICFA approved the formation of the ILC-IDT with a mandate to make preparations for the ILC Pre-Lab in Japan, as the first step of the preparation phase of the ILC project. ICFA appointed Tatsuya Nakada, a professor at École Polytechnique Fédérale de Lausanne (EPFL) in Switzerland, as the chair. Nakada is a former chair of the Linear Collider Board, a panel of ICFA that promoted the case for the construction of an electron-positron linear collider and its detectors as a world-wide collaborative project.

The Team is hosted by KEK and consists of the Executive Board (EB) and three Working Groups (WG1, WG2 and WG3). The EB comprises a Chair, three members representing the three regions contributing to the ILC effort (Americas, Asia-Pacific and Europe), and three ex-officio members (KEK liaison officer and Chairs of WG2 and WG3, whereas WG1 is chaired by the EB Chair).

The Team members are:

- **Tatsuya Nakada** (EPFL), Chair–Executive Board and Working Group 1
- **Steinar Stapnes** (CERN), Regional Representative–Europe
- **Andy Lankford** (University of California, Irvine), Regional Representative–Americas
- **Geoffrey Taylor** (University of Melbourne), Regional Representative–Asia-Pacific
- **Shinichiro Michizono** (KEK), Chair–Working Group 2
- **Hitoshi Murayama** (University California Berkeley/ IPMU-University of Tokyo), Chair–Working Group 3
- **Yasuhiro Okada (KEK)**, KEK Liaison

The Team has commenced its work and is expected to complete its mandate by the end of 2021.

[Full Text of ICFA Statement](#)