

LC NEWSLINE

THE NEWSLETTER OF THE LINEAR COLLIDER COMMUNITY

DIRECTOR'S CORNER



Directorate on the road

by Lyn Evans

The LCC Directorate is constantly reinforcing its bridges, especially with our Japanese colleagues. At this critical time before the decision whether Japan will offer to host the ILC is taken, they travelled to the designated site to inspect port, roads and discuss with local and national authorities, reports LCC Director Lyn Evans. If the ILC gets built, some real bridges will have to be reinforced so that heavy high-tech can travel from the port to the site.

LIVE FROM JAPAN

A chat with Masataka Miya of the Iwate Government

by Amanda Wayama



Things are moving forward in the year 2015 – technical planning for the ILC is proceeding, and the Japanese national government is preparing to make a decision whether or not to host the project. But what about Iwate, the region home to the Kitakami candidate site? What are their plans for 2015? Masataka Miya, director of ILC Promotion for Iwate, talks to Amanda Wayama, International Communications Officer for the Iwate

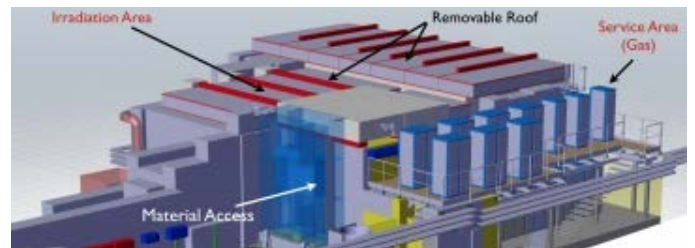
Prefectural Government, about Iwate's strategy for the next year.

AROUND THE WORLD

2020 on the horizon

AIDA-2020 proposal selected – 10 million euros of funding for detector R&D

by Barbara Warmbein



Good news for detector developers in Europe: the AIDA-2020 proposal to the European Commission has been selected to be funded as part of the Horizon 2020 programme. This means that future projects needing state-of-the-art particle detectors like the Large Hadron Collider upgrade and the linear collider will receive a total of ten million euros funding over the next four years. Thirty-eight participants from all across Europe take part in AIDA2020, including CERN as coordinating institute, making it the largest European detector R&D project.

IMAGE OF THE WEEK



Chocolate collision

by Rika Takahashi

The LCC Directorate was given a special treat during one of the stopovers of the Tohoku visit (read also the Director's corner): ILC korone, a type of chocolate croissant. With chocolate cream on one side (representing electrons) and vanilla cream on the other (representing positrons), and sprinkled with colored chocolate spray as particles, the baker said that they show you new particles at ILC collisions. A delicious example of physics-inspired food... [View all photos](#)

IN THE NEWS

from *Kahoku Shinpo*

14 January 2015

[＜ I L C 誘致 ＞ 国際組織幹部が現地視察](#)

「国際リニアコライダー（ I L C ）」の研究者でつくる国際推進組織リニアコライダー・コラボレーション（ L C C ）の幹部7人は13日、 I L C 建設候補地の北上山地視察のため気仙沼、一関両市を訪れた。

from *Kahoku Shinpo*

15 January 2015

[＜ I L C 誘致 ＞ 国際組織幹部が東北大訪問](#)

リニアコライダー・コラボレーション（ L C C ）の幹部8人が14日、仙台市の東北大などを訪れた。建設候補地の北上山地に I L C ができた場合の外国人研究者の受け入れ態勢などについて、東北の産学官関係者と意見交換した。

from *Nikkei Shimbun*

15 January 2015

[次世代加速器の国際組織幹部、建設地「北上山地を想定」](#)

国内外の研究者らでつくる次世代加速器「国際リニアコライダー（ I L C ）」の国際推進組織の幹部らは14日、2日間の東北視察を終えた。

from *Denki Shimbun*

15 January 2015

[東北経済連会長、 I L C 推進組織メンバーと面談ー「地域も期待」](#)

高橋宏明・東北経済連合会会長（東北電力会長）は14日、 L C C 主要メンバーと仙台市内で面談した。一行を迎えた高橋会長は東北訪問に感謝の意を示し歓迎。「地域の子どもたちが I L C に高い関心と期待を持っている」などと伝えた。

from *Kahoku Shimpō*

13 January 2015

[大型放射光施設誘致 村井知事、仏先進地視察へ](#)

村井嘉浩知事は13日、原子レベルで物質の構造を解析する大型放射光施設の誘致実現に向け、先進地のフランス南東部グルノーブルを視察する予定を明らかにした。村井知事はグルノーブル視察の日程中に、併せてスイスの欧州合同原子核研究所（ C E R N =セルン）を視察する意向も示した。岩手県南と宮城県北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（ I L C ）」の建設推進につなげる考え。

from *Mainichi Shimbun*

14 January 2015

[I L C 計画:研究者ら視察訪問 候補地の気仙沼に](#)

岩手・宮城両県などが誘致を進める巨大加速器 I L C の建設計画に関連し、施設を利用しての国際共同研究を予定する「リニアコライダー・コラボレーション（ L C C ）」のメンバーが13日、気仙沼市を視察に訪れた。

CALENDAR

Upcoming events

[SiD Workshop](#)
SLAC, California, USA
12- 14 January 2015

[CLIC Workshop](#)
CERN, Switzerland
26- 30 January 2015

[View complete calendar](#)

PREPRINTS

ARXIV PREPRINTS

[1501.04486](#)
The leptophilic dark matter with Z' interaction: from indirect searches to future $e+e^-$ collider searches

[1501.03283](#)
Study of Higgs-gauge boson anomalous couplings through $e^-e^+\rightarrow W^-W^+H$ at ILC

[1501.02614](#)
CLICdp Overview: Overview of physics potential at CLIC

[1501.01380](#)
Probing $WW\gamma$ coupling through $e\gamma\rightarrow\nu W$ at ILC

ANNOUNCEMENTS

Calendar call

Help us keep the calendar up to date by submitting information about future meetings, workshops, schools and conferences on the [calendar page](#). Thank you!

LCC NEWSLINE

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DIRECTOR'S CORNER

Directorate on the road

Lyn Evans | [22 January 2015](#)



The LCC Directorate and their hosts near the designated interaction point. Image: Rika Takahashi

Recently the Linear Collider Collaboration (LCC) Directorate visited the proposed location of the International Linear Collider in the Kitakami mountains located in Iwate and Miyagi prefectures, north of Sendai city, Japan. LCC members have visited the candidate site several times already, and the purpose of this visit was to evaluate the conditions of transportation of heavy equipment from a major port to the collision point. We also wished to strengthen mutual understanding with local governments and industries as well as universities.

We first visited the closest port to the interaction point. Some parts for detector and machine will arrive in Japan by ship, so a working port and appropriate roads between port and interaction point are essential. Kesennuma Port was devastated by the 2011 tsunami with considerable loss of life. Extensive rebuilding of infrastructure is still in progress. The port is mainly for the fishing fleet but there are some deep water berths that can service larger vessels. The port should be good for large items but has no

facilities for handling containers.

We travelled the 30 kilometres from the port to the designated interaction point to evaluate the feasibility of transporting the largest objects, in particular the solenoid magnets for the detectors. No serious obstacles were encountered although a number of bridges will need temporary reinforcement for the heavier loads. The new location of the interaction point will allow a vertical shaft to ease detector installation.

In the evening we met with Tatsuya Tasso, the Governor of Iwate prefecture, and Osamu Katsube, the mayor of Ichinoseki city, Masaki Ozawa, the mayor of Oshu city, and Shigeru Sugawara, the mayor of Kesennuma city, as well as local advocate groups for the ILC. Discussions with all local and regional officials were very productive. They are very keen and enthusiastic about hosting the ILC.

The next day we met with officials of Tohoku University in Sendai, Miyagi prefecture. After a welcome by the President Sadayoshi Satomi, we met with the Tohoku University Council for the Promotion of the ILC. We received reports of the considerable work that is going on in support of the ILC, including geological surveys, ground vibration studies, transportation and town planning. After that we paid a courtesy visit to Yoshihiro Murai, the Governor of Miyagi Prefecture, and Yukimoto Ito, the Vice Mayor of Sendai city, and attended a meeting of the Tohoku Economic Federation followed by a meeting of the town planning working group which is studying campus design.

The following day we relocated to Tokyo for meetings with Diet Members and officials from the Ministry of Education, Culture, Sports,

Science and Technology (MEXT). This is now a very critical time for the ILC. Interim reports of the two Working Groups, one on the scientific case and the other on the technical design and cost, are expected in April. The findings of these Working Groups will be critical input into the Japanese Government in making the decision on whether or not it wants to host the ILC.

[ILC SITE](#) | [INTERACTION REGION](#) | [IWATE](#) | [JAPAN](#) | [KITAKAMI](#) | [MEXT](#) | [MIYAGI](#)

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Map of AIDA-2020 participants.

Good news for detector developers in Europe: the AIDA-2020 proposal to the European Commission has been selected to be funded as part of the Horizon 2020 programme. This means that future projects needing state-of-the-art particle detectors like the Large Hadron Collider upgrade and the linear collider will receive a total of ten million euros funding over the next four years. Thirty-eight participants from all across Europe take part in AIDA2020, including CERN as coordinating institute, making it the largest European detector R&D project.

AIDA 2020 follows in the footsteps of previous EU-funded detector development projects like [EUDET](#) or [AIDA](#). But whereas EUDET was solely for linear-collider detectors, and the first AIDA already had LHC and neutrino detector R&D on board, the new AIDA structure repackages all these different projects for more overlap and stronger ties between researchers and their expertise.

The project will concentrate on so-called horizontal activities, i.e. areas that every detector needs such as microelectronics and software development, as

well as more specific areas like gaseous detector, silicon detectors or calorimetry. Most detectors for particle colliders share the same basic setup, with concentric layers of trackers, calorimeters, muon detectors and a strong magnet, and although the requirements vary between future detectors at the LHC and at the linear collider, the fundamental technologies are the same. Common working groups spanning all projects working on the overall technology are supposed to increase efficiency, encourage cooperation and even provide some cross-fertilisation.

Like its predecessor, AIDA-2020 puts emphasis on common infrastructures like test beams at various labs and irradiation facilities and supports upgrades of their instrumentation as well as the access of the international user community. And as encouraged by the European Commission, innovation and outreach receive a stronger boost as well.

The preparation team hopes that this will be a boost for the future of particle physics in Europe and something they can build on for the future... After all AIDA-2020 received 14.5 out of 15 marks for excellence, impact and implementation. The project will officially start some time in May with a kick-off meeting.



CERN's GIF++ irradiation facility is one of the many infrastructures supported through AIDA-2020

[Horizon 2020](#)

Horizon 2020 is the biggest European Research and Innovation programme ever with nearly €80 billion of funding available over seven years between 2014 and 2020. Horizon 2020 puts strong emphasis on the coupling of research and innovation, thus “helping to achieve securing Europe’s global competitiveness with its emphasis on excellent science, industrial leadership and tackling societal challenges. The goal is to ensure Europe produces world-class science, removes barriers to innovation and makes it easier for the public and private sectors to work together in delivering innovation.”

[CERN](#) | [DESY](#) | [DETECTOR R&D](#) | [EUROPEAN UNION](#) | [GASEOUS DETECTORS](#) | [LHC UPGRADE](#) | [LINEAR COLLIDER](#) | [MICROELECTRONICS](#) | [SOFTWARE](#)

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A chat with Masataka Miya of the Iwate Government

Amanda Wayama | [22 January 2015](#)



Masataka Miya, director of ILC Promotion for Iwate, Japan, talks about the prefecture's plans for the ILC.

Things are moving forward in the year 2015 – technical planning for the ILC is proceeding, and the Japanese national government is preparing to make a decision whether or not to host the project. But what about Iwate, the region home to the Kitakami candidate site? What are their plans for 2015? Masataka Miya, director of ILC Promotion for Iwate, kindly agreed to sit down and talk about Iwate's strategy for the next year.

Iwate is a lot more rural than the international cities of Tokyo or Osaka. What is the government doing to prepare for a possible influx of foreign residents? "We are making an online guide for living in the area, and there are deliberations at the prefectural and municipal level on changes to be made to the education and health care system," said Miya. "We are also jointly researching with Iwate Prefectural University (IPU) on what kind of human resources we need and how to train those human resources." Another ILC link: IPU also has the honour of welcoming new president Atsuto Suzuki, director general of KEK!

The Iwate government is also interested in creating an international school. There's no official plan for a school yet, but the office is gathering as much information as they can. Iwate governor Takuya Tasso even visited the International School of Geneva last autumn. There are many options to consider, and the prefectural government may not be the entity creating the school, but "we are gathering information so we can start concrete deliberations in the future," Miya said.

How will the ILC fit in Iwate's society? "Kitakami's combination of gentle hills, rice fields, and small villages are called *satoyama* in Japanese, or hilly heartland. We want to develop a community surrounding the ILC that takes into account the *satoyama*'s history and culture. It should strive for harmony with nature and protect the Kitakami site's natural beauty, and it must make use of its existing resources. We will certainly need apartment complexes for researchers, but we're also considering how to integrate those with already-existing towns, and renovating older Japanese homes for use by the researchers."

The vision in general is the creation of an "international science and technology research zone." Maybe someday we'll even be looking at a dedicated city of science, where cutting-edge research and Japanese culture collide just like the ILC's electrons and positrons. The result? A truly international Iwate.

"Iwate Prefecture welcomes the ILC. We'll be making Iwate a welcoming and comfortable living environment for the researchers." The ILC would also become a driving force in the reconstruction from the 2011 earthquake – some of coastal cities devastated by the tsunami are only around 30 minutes away from the site by car. The economic boost from construction, boom in local employment, and increased international exchange will be some of the many wonderful things helping out the region, but in the end, the hope is that the ILC will be a source of new hopes and dreams for the children of Iwate.

Links to English-language Iwate Resources

- [Rock On Iwate](#)
Please subscribe to the Iwate government's Facebook page for daily updates on Iwate culture, sightseeing, and other interesting tidbits.
- [Iwate Prefecture's English Resources](#)
We're working on making this resource easy-to-use and thorough. We will expand into more languages in the future!
- [The ILC Support Committee](#)
This group of foreign residents of Iwate are providing their unique voice in building a more multicultural Iwate.
- [Oshu City's ILC Promotion Division](#)
Oshu is in the northern half of the Kitakami site, and is home to Maesawa beef, cast-iron goods, and the National Astronomical Observatory. | See also Oshu city's [Facebook](#)
- [Ichinoseki City's ILC Page](#)
Ichinoseki is in the southern half of the Kitakami site, and is home to a treasure trove of sightseeing and good food.
- [Oshu For You](#)
ISC members star in videos showcasing some of the many charms of the Oshu area.



One of Tohoku's 5 Great Snow Festivals, the Iwate Snow Festival held at Koiwai Farm. Image: Iwate Tourism Association



About the author

Amanda Wayama is the International Communications Officer for the Iwate Prefectural Government, splitting her time between public relations and ILC work. She's been in Japan for six years, five of which were spent in Iwate, and she's just about used to the cold Iwate winters. She likes spending her free time knitting (again, cold winters) and sampling craft beer from the region. Newly married to a lifelong Iwatean, Amanda is looking forward to spending her life in this beautiful prefecture.

[IWATE](#) | [JAPAN](#) | [KITAKAMI SITE](#) | [SCIENCE CITY](#)

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IMAGE OF THE WEEK

Chocolate collision

Rika Takahashi | [22 January 2015](#)



Image: Akira Yamamoto

The Linear Collider Collaboration Directorate was given a special treat during one of the stopovers of the [Tohoku visit](#): ILC corone, a type of chocolate croissant. With chocolate cream on one side (representing electrons) and vanilla cream on the other (representing positrons), and sprinkled with colored chocolate spray as particles, the baker said that they

show you new particles at ILC collisions. A delicious example of physics-inspired food...



Image: Rika Takahashi