

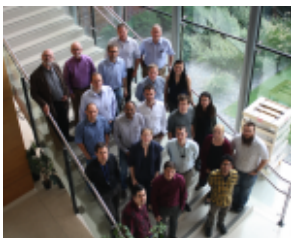
LC NEWSLINE

THE NEWSLETTER OF THE LINEAR COLLIDER COMMUNITY

FEATURE

SiD optimisation group moves towards new detector model after PNNL meeting

by Jan Strube, PNNL



SiD, one of the two planned detectors for the ILC, decided at the end of last year to change their simulation and reconstruction framework. At a recent meeting at the Pacific Northwest National Laboratory in the US the optimisation group got their heads

round simulations, detector and physics studies in the new software framework. This is an important step towards SiD's technical design report.

DIRECTOR'S CORNER

Forming a new plan for R&D

by Lyn Evans

First bilateral discussions between the Japanese and US administrations have led to a new emphasis in accelerator R&D for the linear collider that is both good and bad, Lyn Evans says. More bilateral discussions between Japan and European and Asian countries will follow. In the meantime, the community will lay down plans for SCRF research for the next two to three years during a dedicated workshop-in-a-workshop in December. Evans, current Director of the Linear Collider Community, hopes for great turnout.



AROUND THE WORLD

From Kitakami Times: Talking about 2016's LCWS with Prof. Shinya Narita of Iwate University



The editors of Kitakami Times, a newsletter about the Tohoku region and the ILC, met with Iwate University's Professor Shinya Narita, the local head of planning for the LCWS in Morioka. He told them what's going on, and what kind of help he's looking for from local foreign residents.

ANNOUNCEMENTS

The LC NewsLine guide to... Morioka noodles

by Rika Takahashi



LCWS 2016 is one and half months away. LC NewsLine received a welcome message from Morioka to invite you to LCWS. If you have not registered yet, sign up now!

IN THE NEWS

from *SE Daily*

20 October 2016

[문병도의 톡톡 생활과학] 제 2의 '신의 입자'를 찾아라...가열되는 입자 가속기 경쟁
'물질을 구성하는 기본입자는 무엇인가'는 물리학자와 화학자들의 최대 관심사다.

from *Der Standard*

19 October 2016

Peter Higgs: "Ich hoffe, dass es mehr als ein Higgs-Teilchen gibt" – derstandard.at/2000046106024/Peter-Higgs-Ich-hoffe-dass-es-mehr-als-ein-Higgs

Nobelpreisträger Higgs spricht über die ursprüngliche Ablehnung seiner Theorie und gesellschaftliche Verantwortung der Wissenschaftler

from *NetEase*

19 October 2016

LIGO前负责人：中国空间引力波探测赶超欧美不难

除了LIGO前负责人外，Barry Barish还曾经担任国际直线对撞机（International Linear Collider, ILC）的全球设计团队负责人。拟议中的国际直线对撞机是一台超高能量的正负电子对撞机，精度超过大型强子对撞机（LHC），是一个大规模国际合作计划项目，美国、欧洲和日本都在积极争取成为该项目的落户地。（In addition to the former head of LIGO, Barry Barish also served as the International Linear Collider (International Linear Collider, ILC), the global design team leader. The proposed International Linear Collider is an ultra-high-energy electron-positron collider that outperforms the Large Hadron Collider (LHC) and is a large-scale international cooperative program with projects in the United States, Europe and Japan. And actively strive to become the project settled.)

from *Kahoku Shinpo*

19 October 2016

< I L C > 宇宙の謎解明 中高生も期待

超大型加速器「国際リニアコライダー（ILC）」の東北誘致に向けて若い世代に関心を持ってもらおうと、東北ILC推進協議会は18日、仙台市青葉区の中高一貫校の仙台青陵中等教育学校で講演会を開いた。（Tohoku ILC Council hosted a talk show on 18 October, for junior and high school students in Sendai city.）

from *NC Network*

17 October 2016

世界最薄*1の光発電エコ・ドライブ*2 ウォッチ『シチズン エコ・ドライブ ワン』を10月28日から東京ミッドタウンで開催される「Salone in Roppongi」に展示

シチズン時計株式会社(本社：東京都西東京市、代表取締役社長：戸倉敏夫)は、2016年10月28日(金)から東京ミッドタウン内コートヤードで開催される「Salone in Roppongi(サローネ イン ロッポンギ)」にて世界最薄の光発電エコ・ドライブウォッチ『Eco-Drive One(エコ・ドライブワン)』を展示します。

from *News 163*

17 October 2016

Hello Kitty 代言日本超级对撞机

你也许不熟悉超大型对撞机，但不可能不认识 Hello Kitty。这只源于日本、风靡世界的小猫是“卡哇伊”文化的代表，其可爱甜美的形象已经出现在上万种商品上，每年畅销数十个国家。

from *CERN Courier*

14 October 2016

CLIC steps up to the TeV challenge

An updated baseline-staging scenario for CERN's Compact Linear Collider (CLIC) focuses on an optimised initial-energy stage at 380 GeV that will be significantly cheaper than the original design, say Philipp Roloff and Daniel Schulte.

from *Iwate Nippo*

9 October 2016

ILC受け入れへ熱意発信 12月盛岡で国際会議

宇宙創成の謎に迫る大型実験施設、国際リニアコライダー（ILC）計画などを話し合うリニアコライダー国際会議（LCWS）は12月5日から9日まで盛岡市で開かれる。（LCES 2016 will be taken place in Morioka city from 5 to 9 December）

CALENDAR

Upcoming events

[6th Low Emittance Rings Workshop \(LOWERING 2016\)](#)
SOLEIL, Gif-sur-Yvette, France
28 October 2016

[International Workshop on Future Linear Colliders \(LCWS2016\)](#)
Morioka, IWATE (Japan)
05- 09 December 2016

Upcoming schools

[Tenth International Accelerator School for Linear Colliders](#)
Susono, Shizuoka, Japan
08- 19 December 2016

[View complete calendar](#)

PREPRINTS

ARXIV PREPRINTS

[1610.04666](#)
High Power Polarized Positron Source

[1610.02983](#)
Exploring the Top-Higgs FCNC Couplings at Polarized Linear Colliders with Top Spin Observables

[1610.02618](#)
Collider Phenomenology of $e^-e^- \rightarrow W^-W^-$

[1610.01947](#)
Commissioning of the new multi-layer integration prototype of the CALICE tile hadron calorimeter

ANNOUNCEMENTS

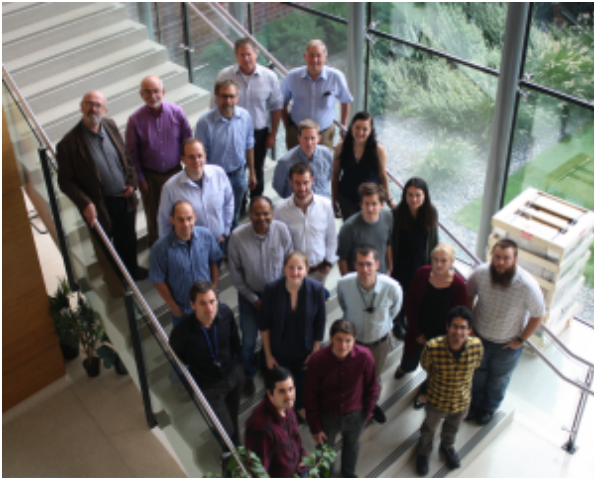
Physics School

The [2017 CERN-Latin-American School of High-Energy Physics](#) will be held in San Juan del Rio, Mexico, from 8 to 21 March 2017. The deadline for applications is 18 November. The lectures will cover a broad range of HEP topics at a level suitable for students working for a PhD in experimental particle physics. Financial support may be available for Latin-American students attending the School. Although the School is targeted particularly at students from Latin-American countries, it is open to self-funding students coming from other regions.

FEATURE

SiD optimisation group moves towards new detector model after PNNL meeting

Jan Strube, PNNL | [20 October 2016](#)



Participants of the 2016 SiD optimisation workshop at PNNL.

With LCWS in Morioka just over eight weeks away, and several new students from the University of Oregon, University of California at Santa Cruz and University of Texas at Arlington joining the optimisation effort, the SiD optimisation group decided that the time was right to hold a workshop dedicated to getting new users up to speed with how to use a different framework. The Pacific Northwest National Laboratory (PNNL) hosted the event, and 20 people from the U.S. and Europe found their way to Richland, WA, about 14 miles away from the LIGO Hanford Observatory.

While the ILC accelerator published their TDR in 2012, the detectors still have a way to go before they can publish their TDRs. The SiD detector consortium decided at the end of 2015 to change their simulation and reconstruction to the new framework developed by ILD and CLIC, which is partially supported by the EU-AIDA2020 project. This change is quite disruptive, as users are moving from tools written in Java to a purely C++-based infrastructure. However, it became mandatory due to the lack of support for SiD's core

software framework.

The benefits of having a common event data model like [LCIO](#) became obvious, as simulations and reconstruction files produced in the old framework could easily be read in the new framework.

The first day of the meeting consisted of software tutorials, primarily prepared by the Glasgow group. While there were the usual unexpected software teething problems, we were able to soldier on and simulated single particles with a version of the SiD detector using the new DD4HEP geometry description. We hope to get much closer to a production version by LCWS 2016 meeting.

The second day was dedicated to detector studies, beginning with a warm welcome to PNNL by the Signature Science and Technology Division Director Randy Hansen, and a historical perspective from Marty Breidenbach, spokesperson of the SLD collaboration at the last high-energy linear accelerator. The day was capped with a lovely dinner at a local winery. The third day was devoted to physics studies, ranging from a study of double Higgs production in the context of an effective field theory to SUSY searches in the forward detectors.

The times are certainly challenging, but SiD keeps taking steps towards a TDR and realising the detector concept. If the spirit at the workshop is any indication, we have a lot of interesting studies ahead of us. I personally look forward to new SiD material at the LCWS in Morioka.

[DETECTOR R&D](#) | [PNNL](#) | [RECONSTRUCTION](#) | [SID](#) | [SIMULATION](#) | [SOFTWARE](#)

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DIRECTOR'S CORNER

Forming a new plan for R&D

Lyn Evans | [20 October 2016](#)



Engaging with the Japanese public means taking on board local heroes... Science x Hello Kitty (c) 1976, 2016 SANRIO CO., LTD. APPROVAL NO. S571891

The linear collider community will conclude the year at the [LCWS in Morioka](#) in December. I know that travel funding is tight for many of you but it is important to have a good turnout at this workshop to show the strong continuing international interest and commitment in the construction of a linear collider as an essential next step in our quest to understand nature at the deepest level.

We have been clearly told that there will be no decision from Japan concerning its wish to host the ILC for at least the next two years. Consequently, we have to adjust our objectives to cope with the meagre resources that will be available during this time. The International Committee for Future Accelerators ICFA has decided that the Linear Collider Collaboration structure with the Linear Collider Board as oversight body should remain, but be slimmed down. The Machine Advisory Committee, which was useful for a technical review of the TDRs, will now be mothballed until a final decision is made and a real project structure is in place. The roles of Regional Directors will be, at least formally, abolished. It has been difficult if not impossible for our colleagues who are currently assuming these roles to make much progress in promoting the ILC due to the lack of interaction between the executive in Japan and other governments. Physicists can explain to their governments the scientific interest and strong will to

collaborate but they cannot do much more until formal contact has been made between administrators. Once political agreements are reached we have shown that we can be very effective in collaborating to build a project of the size of the ILC, as testified by the LHC.

Bilateral discussions have now opened between the Japanese and US administrations. So far, these discussions have had both good and bad effects on our community. It has been agreed that the next two years should be used for R&D leading to cost reduction, albeit with totally inadequate resources. However, this comes at a price that design work, especially in the US, will be stopped to liberate these resources. As Mike Harrison explained in a [previous article](#), it is now important to carefully document the work that has already been done so that if the green light is given, the final design can start from a sound basis. The next step will now be to open up a similar dialogue with governments in Europe and Asia. This will be particularly challenging in Europe due to the large number of countries involved, although CERN has been mandated to be the entry point for its Member States. Once this dialogue starts in earnest, we must rely on all of you to educate your administrations.

Fortunately, there is a strong interest in Superconducting Radio Frequency (SRF) and its associated technologies around the world independently of the ILC. We must now see how we can profit from these worldwide R&D activities to push forward the ILC design with very limited resources. For this reason, there will be a workshop during LCWS where the plans over the next two to three years, not only for SRF R&D but also for associated technologies, of the concerned laboratories will be discussed in order to get a global picture of what can be achieved.

In the meantime, we will continue to provide the Japanese government and its associated committees with all the information they request. We will also engage more with the general public, especially in Japan, to explain the scientific case and more broadly the advantages of having a flagship International Organization in Japan.

I hope to see you in Morioka.

[ACCELERATOR R&D](#) | [ICFA](#) | [IWATE PREFECTURE](#) | [LCB](#) | [LCC](#) | [MORIOKA](#)

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NEWSLINE

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AROUND THE WORLD

From Kitakami Times: Talking about 2016's LCWS with Prof. Shinya Narita of Iwate University

20 October 2016



Professor Shinya Narita talks to The Kitakami Times about LCWS2016

The Linear Collider Workshop is a yearly gathering of scientists from around the world in order to discuss future high energy linear electron-positron colliders like the International Linear Collider. This year it's happening in Morioka City in northern Japan, a stone's throw away from the proposed site for the ILC, the Kitakami mountains!

We've got [a guide to Morioka](#) itself already online, but what about the LCWS? We met with Iwate University's Professor Shinya Narita, the local head of planning for the LCWS in Morioka, who told us what's going on, and what kind

of help he's looking for from local foreign residents.

Tell us about yourself.

My name is Shinya Narita and I'm a professor at the Department of Physical Science and Engineering at Iwate University (in Morioka City). I'm also the Chair of the Local Committee for the 2016 LCWS. My specialty is related to elementary particle physics— just like the ILC. This is something I've been doing since I was a university student.

What kind of event is the LCWS?

LCWS stands for Linear Collider Workshop. It's the largest workshop in the world on linear colliders, which includes the ILC. The host switches every year from Asia, the EU, and North America, and this year is Asia's turn. Because things are moving forward with the ILC candidate site in Iwate, this year's LCWS was decided to be held in the capital of Iwate, Morioka City. We estimate around 300 researchers will be coming from around the world, representing many different specialties and perspectives on physics, accelerators, detectors, and more.

Aside from the workshop activities centered on physics, what kind of things do you want to show off about Iwate and the Kitakami site?

It will be a great opportunity for organizations like the Iwate Prefectural government, the Morioka City government, and the Iwate Prefecture ILC Promotion Council to show off Iwate while the researchers are in town.

As Chair of the Local Committee, I hope to collaborate with the events that are being planned by the local area, and have the researchers learn more about Iwate. We are planning an exhibition of local businesses with technology that could help with the ILC. We might even have the Sansa Odori (drum) teams from Iwate University and Iwate Prefectural University perform at the LCWS welcome reception.

The most important part of LCWS will be researchers discussing their latest research with each other. But the Iwate Prefecture ILC Promotion Council is also planning a large-scale event for Iwate residents, which we researchers would like to support. Iwate Nippo (a local newspaper) will be holding a presentation led by local students who recently went to CERN. It would be nice if we had some students help with setting up the venue, but the LCWS will be during school hours so... (laughs).

In general, I really think this will be a great chance for the people of Iwate to get involved with the ILC, and learn more about the project with any events open to the general public.

Can you tell us about the plans for exchange between local businesses and the ILC researchers?

We're planning an exhibition of local businesses, where they'll show off the level of advanced technology in the prefecture. There are other things that are not confirmed yet, but we're also thinking of having a presentation session where local businesses would present their technology to foreign researchers. Or it might be the other way around, with the researchers talking to businesses about what kind of technology they need. Nothing is set in stone yet.

What kind of fun stuff is there in Iwate for the researchers to do?

We're planning an excursion to the proposed site for the ILC for the afternoon of the last day of LCWS. But we'll have to arrange those plans just right, because it will be dark by 4pm and traveling from Morioka takes quite a while. I also know that Iwate Prefecture and Morioka City are planning on setting up a tourist information booth while the LCWS is in session, as some researchers may be coming with their partners and/or families. It will be too soon for skiing, but they could go to the hot springs. (Tsunagi Hot Springs are right near Morioka!)

The LCWS will be held right in the middle of the city, so researchers can take a ride on the Dendenmushi loop bus ([which has an English map](#) !) and explore the city. Local governments might want to place some English-language materials and tourism pamphlets by reception or in the handout packets.

Will you be making any requests to the national government regarding a decision on the ILC during the LCWS?

I think that holding a successful LCWS with all of these international researchers will be a great appeal in itself. It's important to show just how dedicated the research community is towards the ILC. We'll be sharing information on the LCWS in a number of different ways, in hopes that the rest of Japan will get interested in the ILC project. And that will be another boost for the national government.

What can foreign residents in Iwate and the rest of Japan do to get involved?

We researchers will be handling everything for the LCWS meetings, but it would be nice to have volunteers to help with showing researchers around the station or around Morioka. Maybe they could help with signage towards the venue from the station. It would also be great to have some volunteer interpreters for the local business exhibition, as paying for a professional could be cost-prohibitive for some local businesses. I hope we can count on your cooperation!

What message do you have for the scientists of the world?

Please come to Morioka! You'll see how great this place is once you arrive. If things go as planned and the ILC is decided upon, you'll know what kind of place you'll be doing your research. Participants will see how big Morioka is, and what life is like in Ichinoseki and Oshu (which have populations of around 100,000 people, and the infrastructure to go with it). So you'll really get to see how people live their lives.



The author's take

Dr. Narita asked me to talk about my own experiences in Morioka. It's true – I had never heard of Iwate before I came to live here, but I fell in love with place the second I arrived. It's quieter and more laid-back than Tokyo or Kyoto, but it's packed with its own history and charm. And many people agree with me: the "classic" tourist spots of Japan are very nice, but Morioka can't be beaten for its wonderful atmosphere. I'm looking forward to seeing you in December!

(*The interview has been translated and edited for clarity.)

This interview was first published on 14 October 2016 in [The Kitakami Times](#).

LC NEWSLINE

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ANNOUNCEMENTS

The LC NewsLine guide to... Morioka noodles

Rika Takahashi | [20 October 2016](#)

LCWS 2016 is one and half month away. LC NewsLine received a welcome message from Morioka to invite you to LCWS. If you have not registered yet, sign up now!

Message from Kunihisa Yamura, Chairman, Council for Realizing the ILC:

“It’s such a pleasure to have LCWS 2016 in Morioka-Iwate. We are delighted to have an opportunity to welcome you to Morioka. I hope this conference will be successful. Discover our beautiful nature changing with the seasons, our rich history and diverse local food. Meet people in Iwate who are known for their hospitality. We are really looking forward to seeing you in Morioka-Iwate.”

The conference venue, Morioka, is a city famous for a variety of foods, ranging from meat and vegetables to sweets, and especially for noodles. For information for LCWS attendees, LC NewsLine introduces some of Morioka’s delicacies in this issue.

The Three Great Noodles of Morioka

1. Wanko-soba

If you want to have delicious noodles and fun at once, try Wanko soba. Wanko means a bowl in Iwate dialect, and Soba is Buckwheat noodles. So, “Wanko Soba” is “Buckwheat noodle in a bowl”. Well, nothing special? Yes, it is very special kind of cuisine.

What makes it very special is the way they served. The noodle will be served in small portion. As soon as you finish eating the first portion, the server, who is waiting next to you, adds another serving of noodles to the bowl, very quickly. This series of movements continues until you give up. But be careful, the server won’t let you give up so easily. You need to move very quick to close the lid of the bowl before the server gives you another portion. The official record now 559 servings. Give it a try to see how many cups you can eat!

Morioka Reimen

Reimen is originally a Korean dish called Naengmyeon, which means “cold noodles” in both languages. It was introduced by Korean immigrants, and evolved into its own unique style, different from original Korean dish.

The most unique characteristic of Morioka Reimen Noodles is the texture of the noodles. Korean original noodle is made of buckwheat flour, while the Morioka version uses wheat flour, making a semi-transparent rubbery texture.

Morioka reimens are served in a cold soup with beef, kimchi, cucumber, boiled egg, and a piece of fruit such as apple, pear, or watermelon. You may find the fruit on the noodle strange, but actually the fruit helps soothe your mouth from spicy soup. You can try Morioka Reimen Noodles at basically any yakiniku barbecue restaurant in Morioka.



Morioka Reimen

Jaja-men

Jajamen was developed from a Chinese noodle dish called "jia jiang mein." Like Reimen, it is different from the original Chinese version. Jaja-men's flat noodles have a texture similar to udon wheat noodles. They are served with a special meat-miso sauce, cucumber, and green onion, and commonly served with condiments such as grated ginger, garlic, vinegar, and/or hot pepper oil. Make sure to combine everything very well before eat. It has a unique taste, and some get addicted after trying Jaja-men a couple of times: the oldest Jaja-men restaurant in Morioka city usually always has a line of people waiting outside.



Jaja-men