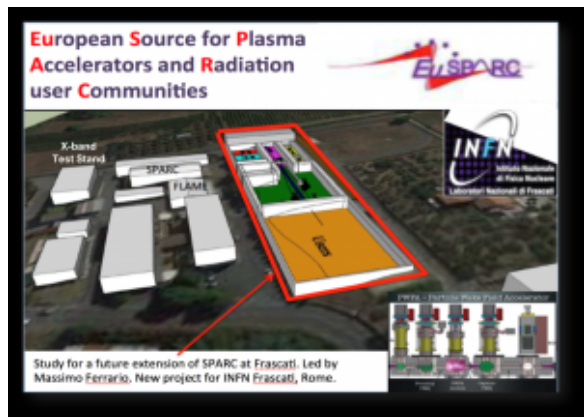


LC NEWSLINE

THE NEWSLETTER OF THE LINEAR COLLIDER COMMUNITY

DIRECTOR'S CORNER



Preparing for the update

by Steinar Stapnes

With input to the update of the European Strategy for Particle Physics due by the end of the year, the linear collider community has its goals clearly defined: progress on the political level and on technology. Steinar Stapnes gives an overview.

FEATURE

Successful visit to Europe: one big step for ILC realisation

by Rika Takahashi



A Japanese delegation of 18 persons – Diet members, government officials, industry leaders, and scientists – toured France and Germany in a four-day visit seeking to strengthen relationships towards ILC realisation. Essential view points from the two countries on investment and timescale were clarified and confirmed with the delegation. The importance to include the ILC into the next European strategy for particle physics was also reaffirmed.

FEATURE

CLIC technology paves the way for High-Lumi LHC and spins off into other areas

Report from the CLIC workshop by Rickard Strom



Meeting under the influence: at this year's CLIC workshop, held last week at CERN, participants kicked off preparations for the upcoming update of the European Strategy for Particle Physics. The project also showed its own influence on other projects from LHC upgrades to light sources, plus of course reports from the accelerator and detector developers about latest results from the various challenging R&D projects.

AROUND THE WORLD

From SLAC National Accelerator Laboratory: Superconducting X-Ray Laser Takes Shape in Silicon Valley



The first cryomodule has arrived at SLAC. Linked together and chilled to nearly absolute zero, 37 of these segments will accelerate electrons to almost the speed of light and power an upgrade to the nation's only X-ray free-electron laser facility.

IN THE NEWS

from *Iwate Nippo*

29 January 2018

IPU President Atsuto Suzuki to visit Europe in March to push forward government negotiations

Prof. Atsuto Suzuki (director of the Tohoku ILC Planning Office and president of Iwate Prefectural University) spoke with the media on the 19th to talk about his January visit to Europe. There he said he was planning to go to Europe in March in order to push forward negotiations on the ILC between European governments and Japan.

Read full translation provided by *Iwate & the ILC* website [here](#).

from *Brinkwire*

24 January 2018

Physicists are planning to build lasers so powerful they could rip apart empty space

Inside a cramped laboratory in Shanghai, China, physicist Ruxin Li and colleagues are breaking records with the most powerful pulses of light the world has ever seen.

from *Newsweek Japan*

23 January 2018

【次世代加速器】中国が科学技術を制したら世界はどうなるか

ただし、競合相手もいる。国際協力の下で計画され日本が誘致を目指す国際リニアコライダー（ILC）と、CERNの将来円形衝突型加速器（FCC）だ。しかし中国は、野心の大きさと政治的・資金的支援の体制で群を抜く。加速器の建設は早ければ21年に、データ収集は28年までに開始される予定。（But, there are competitors. International Linear Collider, promoted by international collaboration to build in Japan, and CERN's FCC. However, China surpass them in term of ambition, political and financial support. They intend to start construction as early as 2021, and collecting data by 2028.）

from *Ifeng.com*

18 January 2018

中国应该建造巨型对撞机

可以说，CERN 发明的万维网催生了第三次工业革命。

from *Iwate Nippo*

18 January 2018

"France and Germany are open to cooperation on the ILC" Prof. Suzuki of IPU on future talks with Europe

This month, a delegation of Japan's non-partisan Federation of Diet Members for the ILC (FDMILC) visited France and Germany to talk with government officials about the ILC. Their main goal was to create a framework of international cooperation that would be vital in realizing the project. Prof. Atsuto Suzuki, head of the Tohoku ILC Planning Office and President of Iwate Prefectural University, also joined in on the trip.

Read full translation provided by *Iwate & the ILC* website [here](#).

from *Iwate Nippo*

18 January 2018

MEXT's Panel of Experts meets to discuss the newly shortened ILC

The Ministry of Education, Culture, Sports, Science and Technology (MEXT)'s Panel of Experts on the ILC has reinstated their working group on elementary particle physics because of the recent changes to the ILC plan. They met at MEXT on January 18th for their first meeting since reinstatement.

Read full translation provided by *Iwate & the ILC* website [here](#).

from *Iwate Nichinichi*

17 January 2018

Iwate Chambers of Commerce talk with the Governor to talk about the ILC and other regional issues

The project will greatly contribute to the development of the region and our reconstruction. This year is an important year for the project, so I'd like to put my efforts into petitioning the national government and other efforts that would support its realization."

Read full translation provided by *Iwate & the ILC* website [here](#).

from *Iwate Nippo*

17 January 2018

Prefectural assemblymen petition the Iwate governor for ILC preparations and information

Governor Tasso said, "We are in an important time right now for the ILC's realization. We at the prefecture will accelerate the pace of our preparations."

Read full translation provided by *Iwate & the ILC* website [here](#).

from *CERN Courier*

15 January 2018

International committee backs 250 GeV ILC

With the ILC having been on the table for more than two decades, the linear-collider community is keen that the machine's future is decided soon. (...) "The Linear Collider Board strongly supports the JAHEP proposal to construct a 250GeV ILC in Japan and encourages the Japanese government to give the proposal serious consideration for a timely decision," says LCC director Lyn Evans.

from *Kahoku Shimpō*

15 January 2017

Ofunato's new ILC office to work on port usage plans

In hopes of realizing the International Linear Collider (a huge particle collider to be built in the Kitakami mountains of Iwate), Ofunato City became the first town on the coast of Iwate to install an office for ILC matters.

Read full translation provided by *Iwate & the ILC* website [here](#).

from *Starts With A Bang, a blog from Forbes.com*

14 January 2018

Ask Ethan: What Does The Future Of Science Look Like?

Meanwhile, as we look ahead, the potential construction of new experiments, such as an International Linear Collider, a next-generation ring-based proton collider, or even (if the technology arrives) a relativistic muon collider could lead us to the next frontiers in fundamental particle physics. It's an incredible time to be alive.

from *Kitakami Times*

10 January 2018

We Meet Again, Strasbourg

This time, we once again visited the beautiful city in late October for Linear Collider Workshop 2017. While the Japanese national government has not moved on the project in the interim since LCWS 2016 in Morioka, we wanted to make sure that all of our friends abroad knew that Iwate and Tohoku are still working their hardest on making the ILC project come to fruition.

from *Iwate Nippo*

4 January 2018

Governor Tasso talks with Iwate Nippo about plans for 2018 including the ILC

"It will be difficult for the national government to make a decision without the will of the people of Japan to build the project. The related parties in Tohoku will band together as one to support the creation of the master development and spillover economic effects, and will convey that widely to the rest of Japan. We will also continue to look for more opportunities to urge the national government to make their decision."

Read full translation provided by *Iwate & the ILC* website [here](#).

from *Le Temps*

28 December 2017

L'avenir de la physique des particules en suspens

«Nous pensons que l'ILC permettra d'obtenir deux ou trois événements – la création du Higgs – toutes les cent collisions de particules; c'est vingt millions de fois plus qu'au LHC.» Et donc, la garantie d'un environnement propre et de mesures de haute précision. (...) Les promoteurs de l'ILC ont joué leur va-tout, en annonçant le 7 novembre une reconfiguration drastique du projet, et un coût réduit à 4,7 milliards de francs: son énergie ne sera plus que de 250 GeV.

from *Nihon Keizai Shimbun*

27 December 2017

宇宙研究用の加速器「ILC」東北誘致へ一歩前進 建設費用の削減案浮上

東北地方で宇宙研究に使う次世代加速器「国際リニアコライダー (ILC)」誘致に向けた動きが活気づいている。北上山地が誘致の有力候補地で、巨額の建設費用も従来より削減した案が固まり、誘致実現へアピールしやすくなった。(The movement towards attracting to the next generation accelerator "International Linear Collider (ILC)" for particle physics research in the Tohoku region is booming. The Kitakami Mountains are a promising candidate site, and the proposal to reduce the huge construction cost has also been settled and appealed for attracting attractiveness.)

from *Iwate Nippo*

23 December 2017

Nobel Prize winners also support the ILC – Messages published in a book to be presented to PM Abe next month

Within, the winners have written about the necessity of the ILC project, and their hope that the Japanese government will host the project. It will be delivered to Prime Minister Shinzo Abe next month. Appearing in its pages are seven foreign scientists, including Dr. Barry Barish (...)

Read full translation provided by *Iwate & the ILC* website [here](#).

from *Iwate Nippo*

23 December 2017

260 million yen allocated for ILC-related items in national budget for FY2018 – an almost 152 million yen increase from FY2017

The Ministry of Education, Culture, Sports, Science and Technology has reformed the Panel of Experts to once again deliberate on the ILC, taking into account this new information. The national government should make their decision on the ILC sometime in 2018.

Read full translation provided by *Iwate & the ILC* website [here](#).

from *symmetry magazine*

19 December 2017

Machine evolution

Planning the next big science machine requires consideration of both the current landscape and the distant future.

ANNOUNCEMENTS

ALCW coming up!

The [Asian Linear Collider Workshop 2018 \(ALCW2018\)](#) will be held from 28 May to 1 June 2018 in Fukuoka, Japan. It is the next in a series of regional linear collider workshops held around the world, and is co-hosted by Kyushu University, KEK, ACFA/AsiaHEP and LCC.

Its programme addresses the physics case for a high-energy linear electron-positron collider, accounting for the recent results from the LHC, and reviews the progress in the detector and accelerator designs for both the ILC and CLIC projects. It will also provide recent information and discussions about the evolution of both projects, after the ICFA statement on the ILC operating at 250 GeV, and at the start of the updating process of the European Strategy for Particle Physics.

Early registration is expected to start in mid-February.

Fukuoka is a historical and vibrant city, and one of the leading cities in Asia. The workshop will be held in [Fukuoka International Congress Center](#).

We are looking forward to seeing you in Fukuoka! Kiyotomo Kawagoe (Kyushu University), Chair of the International Organizing Committee

PREPRINTS

ARXIV PREPRINTS

- [1801.09662](#)
Sensitivity of the ILC to light Higgs masses
- [1801.08505](#)
LYCORIS – A Large Area Strip Telescope
- [1801.08465](#)
Undulator-Based Positron Source at 250 GeV CM Energy with Different Optical Matching Devices: Pulsed Flux Concentrator and Quarter Wave Transformer
- [1801.08398](#)
Results on TOP physics from CMS
- [1801.08395](#)
Effect of optical crosstalk on performance of ILD AHCAL
- [1801.08164](#)
Search for Light Scalars Produced in Association with Muon Pairs for $s\sqrt{= 250}$ GeV at the ILC
- [1801.08083](#)
Exclusive top production at a Linear Collider at and off the threshold
- [1801.08037](#)
Automatised ILC-Bounds on Dark Matter Models with CheckMATE
- [1801.08034](#)
New Developments in WHIZARD Version 2.6
- [1801.07966](#)
Branching ratio measurement of $h \rightarrow \mu+\mu-$ at the ILC
- [1801.07178](#)
ROPPERI – A TPC readout with GEMs, pads and Timepix
- [1801.06534](#)
Probing the Seesaw Mechanism and Leptogenesis with the International Linear Collider
- [1801.05192](#)
Production of Electroweak SUSY Particles at ILC and CLIC
- [1801.05191](#)
New SUSY Fits for the ILC and CLIC
- [1801.05028](#)
CompEx II: A Pathway in Search of BSM Physics using Compton Scattering
- [1801.04671](#)
Study of fermion pair productions at the ILC with center-of-mass energy of 250 GeV
- [1801.04585](#)
Limits on top FCNC decay $t \rightarrow cH$ and $t \rightarrow cy$ from CLIC at 380 GeV
- [1801.04499](#)
Measurement of dE/dx resolution of TPC prototype with gating GEM exposed to an electron beam
- [1801.04256](#)
Higgs Inflation at the LC
- [1801.04156](#)
Impact of the new ILC250 beam parameter set on the SiD vertex detector occupancy arising from $e+e-$ pair background
- [1801.03170](#)
Future Colliders for Particle Physics – “Big and Small”

1801.02840

The role of positron polarization for the initial 250 GeV stage of the International Linear Collider

1801.02024

Performance study of SKIROC2/A ASIC for ILD Si-W ECAL

1801.01379

Alternative $[SU(3)]_4$ Model of Leptonic Color and Dark Matter

1712.09777

Performance of a large aperture GEM-like gating device for the International Linear Collider

1712.09772

Sensitivity to anomalous ZZH couplings at the International Linear Collider

1712.09095

Search for a heavy dark photon at future e^+e^- colliders

1712.06410

Search for a light radion at HL-LHC and ILC250

1712.05680

Technical instrumentation R&D for ILD SiW ECAL large scale device

1712.03410

Minimal anomalous $U(1)$ theories and collider phenomenology

1712.01299

Double check the degenerate Higgs bosons in the CP-conserving two-Higgs-doublet model

NULL