ilc newsline

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FEATURE

New ILC website launched in Japan

by Rika Takahashi



Particle cartoons, enticing images, animations and lots and lots of information – that's what a new website dedicated to the ILC in Japan offers its visitors to help them learn more about the ILC and particle physics. Created by the Advanced Accelerator Association promoting science and technology, it went live on Monday this week.

IMAGE OF THE WEEK

Celebrating the Tevatron

Image: Fermilab, Reidar Hahn

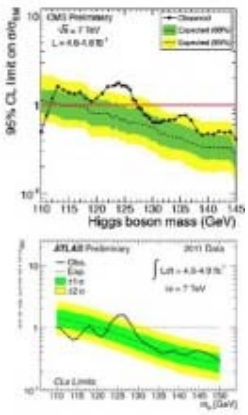


The Tevatron may have stopped running, but it still manages to attract a massive crowd. On Monday, Fermilab celebrated the Tevatron's contributions to science, technology and society in the Tevatron Impact Symposium.

DIRECTOR'S CORNER

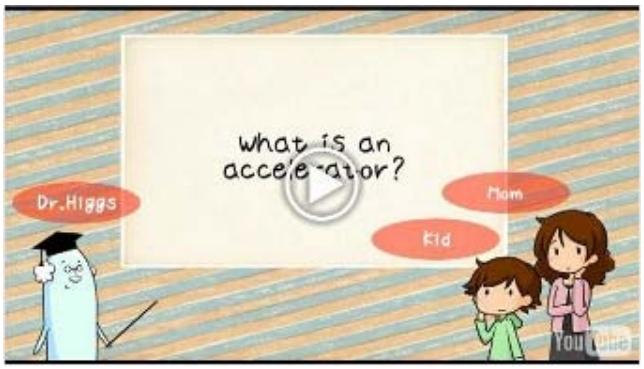
Scientific justification for the ILC

by Barry Barish



At the KILC12 workshop in Daegu, Korea, in May, there was a panel discussion on the topic of what will be required to provide scientific justification for the International Linear Collider. The panel consisted of a cross-section of workshop attendees, accelerator physicists, detector experts, theorists and even one of our communicators. The panel discussion produced areas of agreement, some differences and homework.

VIDEO OF THE WEEK



Dr Higgs explains acceleration

Video: AAA

A taster of the fun things the new Japanese ILC website (see this week's feature story) has in store: with the help of a bunch of batteries, Dr Higgs explains how the ILC works to a child and his mother. In a cartoon, of course.

IN THE NEWS

from ***Reuters***
12 June 2012
Big Bang particle discovery closer: scientists
Researchers on the collider's separate ATLAS and CMS detectors have been "blinded" – or cut off from findings from the rival team and even from different groups inside their own. CERN spokesman James Gillies said the centre would want to make any important announcement, once there was something to say, in Geneva." (…)"Blinding" is used in science to ensure that different groups working on identical experiments but with different if similar equipment do not influence the outcome of each other's research.If they then come to the same conclusion, they can safely be seen to have independently validated each other's results, clearing the way to actually claiming a discovery.

from ***uimp.es***
11 June 2012
El nuevo acelerador de partículas ILC no estará finalizado antes de 2026, según François Richard
Según el experto, Japón se postula como el candidato con más posibilidades de albergar el ILC, ya que estaría dispuesto a contribuir con la mitad de la suma necesaria para financiar el proyecto, que contará con la participación de los grandes laboratorios mundiales. Richard se mostró esperanzado en que no haya disputa por la futura ubicación del acelerador, evitando así lo que sucedió con el ITER

from ***CERN Bulletin***
11 June 2012
Particle physics in your pocket!
CERN physicists, take out your smartphones! Two new particle physics applications for Android phones have been developed by a physicist from the University of Bern: "Particle Properties" and "Particle Physics Booklet 2010".

from ***New Scientist***
8 June 2012
Neutrinos don't outpace light, but they do shape-shift
"This is the first time that velocity was measured with that level of accuracy," Autiero says. But all of that was a sidebar to the experiment's real goal: catching shape-shifting neutrinos in the act.

from ***Iwate Nippo***
8 June 2012
ILC誘致啓発始動 盛岡で研究者が講演
本県への国際リニアコライダー　　誘致を目指す県国際リニアコライダー推進協議会　会長・元持勝利県商工会議所連合会長　主催の講演会は　日、盛岡市上田　丁目の盛岡一高　高橋和雄校長、生徒　　人　で開かれ、東京大素粒子物理国際研究センターの山下了准教授が講演した。(Scientist gave an ILC lecture at Morioka Daiichi high school with a view to realise the ILC in Tohoku area)

from ***Iwate Nippo***
7 June 2012
北上山地がILC適地 県と東北大調査結論

本県の北上山地　北上高地　への誘致を目指す国際リニアコライダー　　について、県と東北大が実施した地質調査の結果がまとまった。(Iwate prefecture and Tohoku University released the report of preliminary site investigation in Tohoku area, and the official says Kitakami mountain has a good geology for ILC construction.)

from ***INFN***
6 June 2012
OPERA Observes the Second Tau Neutrino
The OPERA collaboration has announced yesterday at the Neutrino 2012 conference in Japan, the observation of their second neutrino tau interaction, after the first observation made in 2010.

CALENDAR

UPCOMING EVENTS

36th International Conference on High Energy Physics (ICHEP2012)
Melbourne, Australia
04- 11 July 2012

UPCOMING SCHOOLS

The 2012 European School of High-Energy Physics
Anjou, France
06- 19 June 2012

View complete calendar

BLOGLINE

11 June 2012
Lubos Motl (The Reference Frame)
ILC to be launched in Japan around 2026

9 June 2012
Aidan Randle-Conde (USLHC)
What next for the Higgs?

7 June 2012
Pauline Gagnon (CERN)
Is the moon full? Just ask the LHC operators

PREPRINTS

ARXIV PREPRINTS

1206.2306
Lepton flavour violation: physics potential of a Linear Collider

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FEATURE

New ILC website launched in Japan

Rika Takahashi | 14 June 2012



Screenshot of the new Japanese ILC site

On Monday 11 June, Japan's Advanced Accelerator Association promoting science and technology (AAA) launched a new website where site visitors can get all the information related to the ILC in Japanese.

KEK, Japan's high-energy physics laboratory, is the Japanese centre of ILC R&D, however KEK's website is not the most convenient place to learn about the ILC. Because of KEK's organisational nature, finding ILC-related information on KEK's web site is not easy. KEK is one of the Inter-University Research Institute Corporations, core research bases operated by the research community which provides researchers from Japan and overseas a place to carry out their work.

KEK consists of four institutes and laboratories: the Accelerator Laboratory, the Applied Research Laboratory, the Institute of Materials Structure Science, and the Institute of Particle and Nuclear Studies (IPNS). KEK's ILC activities are pursued by two organisations: the Accelerator Laboratory takes care of accelerator developments, and IPNS deals with physics studies and detector R&D. Those activities run web pages under each organisation's page, which is organisationally correct, but as a result, ILC-related information appears in different places on the web site.

"Here comes our new website," announced Masanori Matsuoka, secretary general of AAA on Monday. AAA facilitates industry-government-academia collaboration, seeking various industrial applications of advanced accelerators and technologies derived from R&D on advanced accelerators.

Since last December, when Yoshihiko Noda, prime minister of Japan, addressed the symposium hosted by AAA, demand for ILC-related information has been greatly increasing. "Of course, KEK can provide scientific and technical information about the ILC. But as an industry-government-academia collaboration, we can provide information going further than that," said Matsuoka.

The new website invites visitors to learn more about the ILC. Trying to make difficult and complicated physics explanations more accessible to the visitors, the website is decorated with friendly features such as animations and cartoons.

Kaori Kurokawa created the particle characters for the pages to explain "what is the Higgs?". "I tried to describe the characteristic of each particle when I created the cartoon characters. It was pretty tough, but I enjoyed the thinking process," said Kurokawa.

The new site also has a page that introduces people involved in ILC activities, or



Sections on the website tell visitors more about physics, the ILC technologies and about the ILC's role in Japan.



Cartoons were created by Kaori Kurokawa.

animations to explain how to accelerate an electron (see this week's Video of the Week!). "We are planning to add more information, such as industrial applications of accelerators in the near future. Please visit our new web site, and give us your feedback," Matsuoka said.

AAA | JAPAN | JAPANESE SOCIETY FOR PROMOTION OF SCIENCE | WEBSITE

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DIRECTOR'S CORNER

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Barry Barish | 14 June 2012

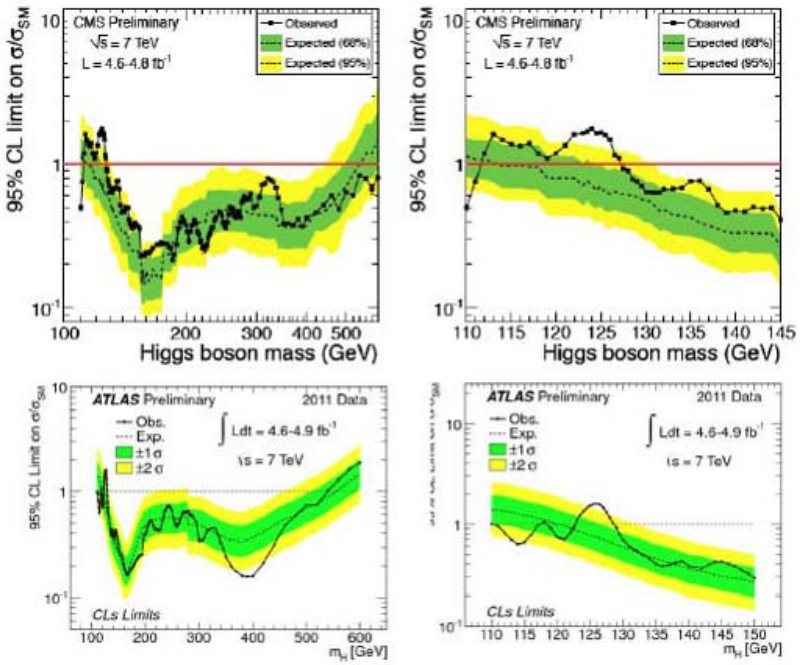


Panel discussion at KILC12, chaired by Hitoshi Yamamoto. Image: KILC12

A first panel discussion on what will be required to provide scientific justification for the International Linear Collider was held at the LCSW11 workshop in Granada, Spain, in September 2011. That lively discussion could be characterised by expressions of a broad set of opinions, but most of the panelists and audience stated that if the Higgs is discovered at the Large Hadron Collider (LHC), this will provide sufficient scientific justification for the ILC project. Since Granada, more results from the LHC have been presented and there are both growing hints for a Higgs boson at around 125 gigaelectronvolts (GeV) and more stringent limits on supersymmetry. At the KILC12 workshop in Daegu, Korea, this past April, there was a lively follow-up panel discussion. The panel consisted of a cross-section of workshop attendees: accelerator physicists, detector experts, theorists and even one of our communicators. The Daegu panel produced areas of agreement, some differences and homework.

Hitoshi Yamamoto, Tohoku University, organised and chaired the Daegu panel discussion. Before the panel met, he sent around an email defining the discussion: “The topic is the mandate of the ILC – what justifies the ILC? – One specific question is ‘If Higgs is found, is it enough for the ILC?’ We would like to separate scientific questions from political questions, but we do not have to ignore the political questions.”

The question of whether the Higgs will provide enough justification is an interesting one in anticipation of a discovery that has not yet been made. The panelists and audience expressed many different points of view in response to this question. A point made by several panelists was that the Higgs is completely different from any other particle we have seen. It couples to mass, and understanding this phenomena will require detailed studies only possible through electron-positron annihilations. On the other hand, the point was also made that we must first undertake to understand what the LHC will be able to learn about the Higgs, beyond discovering its existence. This is especially important,



The present results on the search for the Higgs. The upper plots show the results from CMS and the lower plots the independent results from ATLAS. For both experiments, the Standard-Model Higgs boson is excluded with 95% confidence up to a mass of 600 GeV, except for the window 122.5 to 127.5 GeV where there is an “interesting fluctuation” around masses of about 125 GeV.

considering the long period of time, including upgrades, the LHC will have to study the Higgs.

Other important points came out in the discussion. Even if the physics potential of the ILC is justified by the discovery of the Higgs, should we wait for information on other new physics opened up by the LHC, or should we propose to build a machine to study the Higgs, but upgradeable to higher energy at a later time, perhaps even to energies requiring a different technology, like the CLIC option being pursued at CERN?

Such panel discussions are stimulating and fun, but even more importantly, they can play an important role in focusing us on real questions. In this case, it is the question of what will be required scientifically to justify the ILC. One concrete result of the Daegu panel discussion at KILC12 was that it made it evident that if the Higgs is discovered at LHC, we must have performed serious studies to understand what kind of follow-on physics will be possible with LHC and which Higgs characteristics will require an ILC.

CLIC | HIGGS BOSON | KILC12 | LCWS11 | LHC | PHYSICS CASE

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