



#### ILC Special Classes (2013, 2014)

In 2013 a set of special classes (lectures) about the ILC were held as a way for middle school students in Ichinoseki to deepen their understanding of science technology, and also as an opportunity for them to think about their future career paths and the future of the region.

The lecturers included Tohoku University visiting professor Masakazu Yoshioka and others.

In addition, Osamu Katsube, Mayor of Ichinoseki, has made lecture presentations about the ILC to elementary and middle schools. So far, the Mayor has made these presentations at schools such as Okita Elementary School and Ohara and Muroto Middle Schools.



#### Letters from children looking forward to the realization of the ILC (2013, 2014)

When Mayor Katsube makes his ILC presentations at elementary schools and local community organizations, he receives letters from children who have attended, expressing their hope that the ILC will become a reality.

These letters contain the children's hopes and dreams for the future—they write of wanting to become scientists and researchers, to do work related to the ILC and to work hard at studying English.



#### Eigo no Mori (English Forest) Camp (2014)

Eigo no Mori (English Forest) Camp has been held since 2014. Its goal is to nurture students who can participate in the world at large by improving their English ability and developing global awareness through the experience of living in English in a different culture.

The 2-night/3-day sleeperover camp is held at the Ichinoseki Kenko no Mori facilities, with the participation of 42 second-year students from Ichinoseki middle schools.

During this experience, the focus was on English conversation, and students received instruction from the non-Japanese instructors in English only. There were group activities and games, ILC lectures and introductions to world cultures.

#### Global access to Tokyo



#### Access to Ichinoseki City

Using Tohoku Shinkansen (shortest possible times are shown)

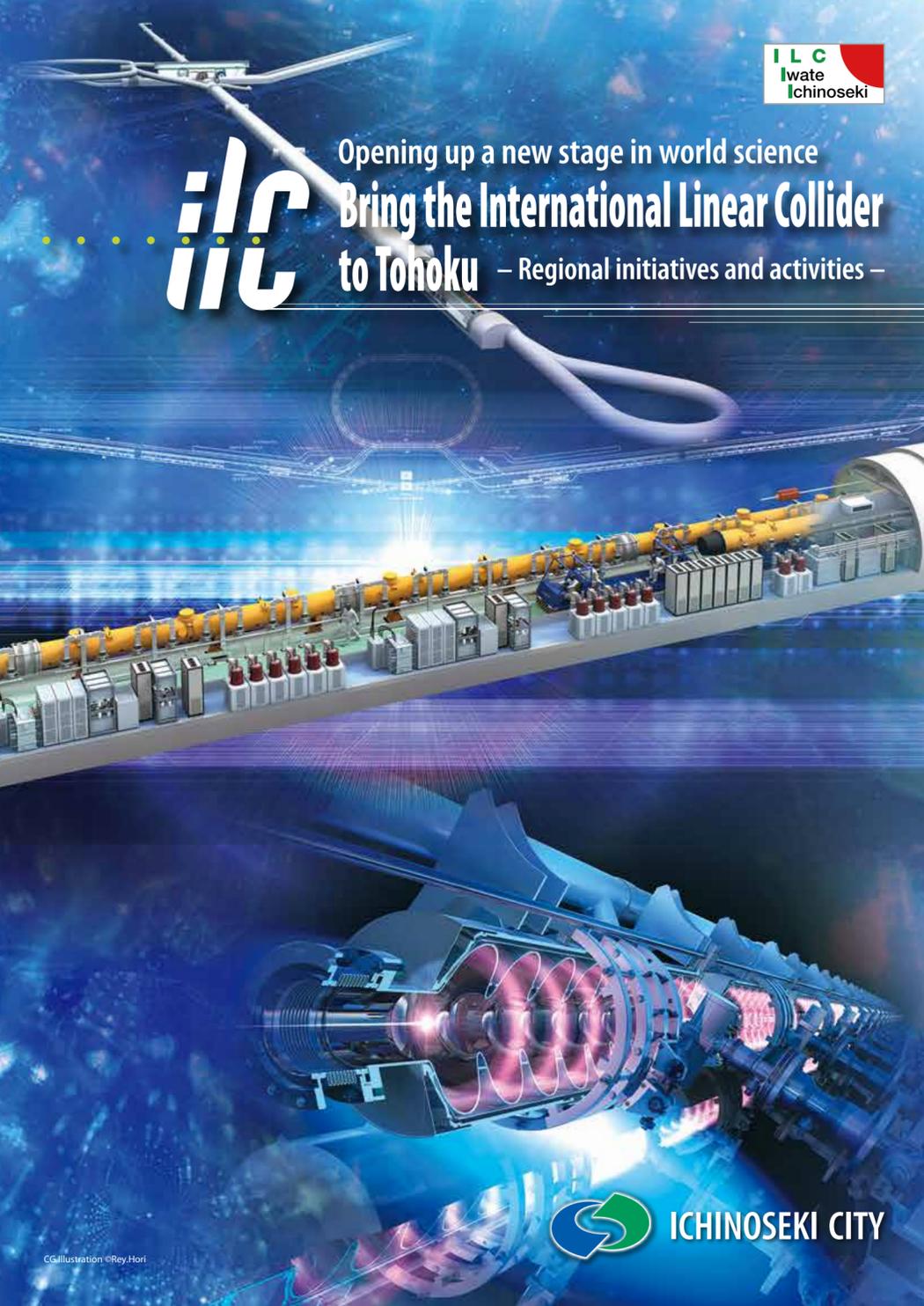


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ILC  
Iwate  
Ichinoseki

# Bring the International Linear Collider to Tohoku

Opening up a new stage in world science  
— Regional initiatives and activities —

## Bring the International Linear Collider (ILC) to Tohoku!!

There are plans to construct the world's most advanced particle testing facilities, the International Linear Collider (ILC) in the solid granite of the Kitakami Highlands. The proposed ILC would have a total length of between 31 and 50 km.

The electrons and positrons used in the experiments are extremely small particles (elementary particles) that cannot be seen by the human eye. In order to ensure the accuracy needed to collide these particles, ground which is firm and free of vibrations is required.

Although the Tohoku region experienced a great deal of damage in the Great East Japan Earthquake, the equipment in the National Astronomical Observatory's Esashi Earth Tides Station, located beneath the Kitakami Highlands, was not at all affected.

From 2012 to 2013 both Tohoku University and Iwate Prefecture carried out detailed geological surveys. The results of these investigations confirmed the Kitakami Highlands as a suitable site for construction of the ILC.

Steady research, investigation and enticement campaign efforts have been ongoing in order to make the ILC a reality. As we enter a new stage of particle research thanks to the discovery of the Higgs boson particle, expectations from around the world are centered on Japan's leadership and enticing the ILC to Tohoku.

Here we introduce the efforts and activities being undertaken by Ichinoseki City and various regional groups in the area to bring the ILC to Tohoku.

## Education of the Next Generation

Since 2011, various special classes and experiential study opportunities have been held for Ichinoseki elementary and middle school students as a way to introduce them to leading-edge science. The purpose of these events is to deepen students' understanding of science technology and to help nurture the next generation of scientists and researchers.



#### Experiential study of leading-edge science for middle school students (since 2011)

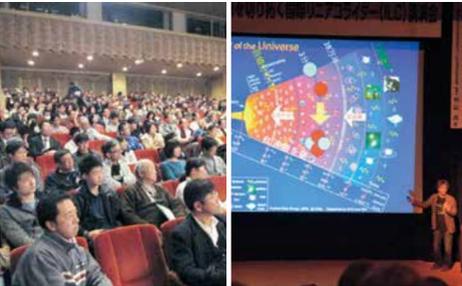
Sixty 3rd-year middle school students from Ichinoseki are sent to the High Energy Accelerator Research Organization (KEK) in Tsukuba and to the Japan Aerospace Exploration Agency (JAXA), where they can talk with researchers and directly experience leading-edge science. This experiential study of leading edge science for middle school students has been going on since 2011; by helping to deepen students' understanding of science technology, the program is part of the plan to nurture the next generation of researchers.

This on-site study takes place every year during the summer vacation. In addition to the on-site study, participants meet beforehand to decide on their research themes and goals, and also afterwards to summarize their studies and make presentations.

ICHINOSEKI CITY

# Raising Awareness

There have been a variety of activities to raise the interest of people both within and outside the prefecture, such as holding lectures and seminars and erecting billboards, so that local citizens can properly understand what the ILC plan is, the significance and value of the plan, and what changes would occur to the region if it is realized.



## ILC Lectures (2014)

An ILC lecture was held in the Ichinoseki Cultural Center Middle Hall on November 22, 2014 to deepen understanding of the significance and value of the ILC, and the effect it will have on the local region. Approximately 350 people from within and outside the city attended.

## Lecture

**Subject** "Using Elementary Particles to zoom in on the Beginning of the Universe"  
**Lecturer** Director, Kavli Institute for the Physics and Mathematics of the Universe at the Tokyo University Institutes for Advanced Study  
 Hitoshi Murayama

## Panel Discussion

**Panelists** Director, Kavli Institute for the Physics and Mathematics of the Universe at the Tokyo University Institutes for Advanced Study  
 Hitoshi Murayama  
 Professor, Graduate School of Science, Tohoku University  
 Hitoshi Yamamoto  
 Mayor of Ichinoseki  
 Osamu Katsube

**Chair / Coordinator**  
 Assistant Head, Announcers Department, IBC Iwate Broadcasting  
 Hiroki Kamiyama



## ILC Seminar (2012)

A series of seminars aimed at private-sector enterprises was held in 2012. The goal of these seminars was to deepen the understanding of the application and development of ILC-related technology and components to industry, to increase interest in the ILC and to stimulate opportunities for realization of the ILC.

### Seminar 1 (August 6)

**Topic** Construction and civil engineering technology required for construction of the ILC  
**Lecturer** KEK Professor Emeritus Masakazu Yoshioka

### Seminar 2 (September 24)

**Topic** Building the accelerator using Japanese manufacturing technology as a base (Mainly the high-power, high-frequency equipment which serves as the heart of the accelerator)  
**Lecturer** KEK Professor Emeritus Masakazu Yoshioka  
 KEK Professor Hitoshi Hayano

### Seminar 3 (November 5)

**Topic** History and Applications of Superconducting Technology  
**Lecturer** KEK Professor Emeritus Masakazu Yoshioka  
 KEK Professor Emeritus Kiyosumi Tsuchiya

### Seminar 4 (December 4)

**Topic** ILC Experiments (1): Structures, principles and underlying technology for measurement equipment at the ILC collision site  
**Lecturer** KEK Professor Emeritus Masakazu Yoshioka  
 Tohoku University Assistant Professor Akimasa Ishikawa

### Seminar 5 (January 21)

**Topic** ILC Experiments (2): Construction, installation and operation of large-scale measurement equipment  
**Lecturer** KEK Professor Emeritus Masakazu Yoshioka  
 KEK Lecturer Yasuhiro Sugimoto

### Seminar 6 (March 25)

**Topic** Summary of Seminars Latest status of the ILC project and impact of ILC construction  
**Lecturer** KEK Professor Emeritus Masakazu Yoshioka  
 KEK Professor Hitoshi Hayano  
 KEK Lecturer Yasuhiro Sugimoto  
 Iwate Chief ILC Promotion Director Hisashi Ohira  
 Kesunuma Superintendent of Education Katsumi Shirohata  
 Ihatov Practical Space Center Chair Masashi Oe  
 Mayor of Ichinoseki Osamu Katsube



## Ichinoseki Science Café (2014)

A series of "Science Cafés" were held at the Ichinoseki Library in 2014. Using particle physics as a starting point, the goal was to make it easy to discuss science and allow people to feel that science is more accessible and familiar. Lectures on particle physics and other topics were held, along with opportunities for participants to speak with professors.

### First Café (July 29)

**Subject** ILC and Work  
**Lecturer** KEK ILC Promotion and Preparation Office Rika Takahashi

### Second Café (September 14)

**Subject** The ILC at the Kitakami Site  
**Lecturer** Associate Professor, Graduate School of Science, Tohoku University Tomoyuki Sanuki

### Third Café (December 14)

**Subject** ILC in Comic Books  
**Lecturer** Comic Book Artist, Uruno Creative Office Takuya Uruno

### Fourth Café (January 18)

**Subject** ILC and the Region  
**Lecturer** Visiting Professor, Tohoku University / Iwate University Masakazu Yoshioka



## Installation of ILC billboards and display of promotional panels and banners (2012)

In order to stimulate opportunities for attracting the ILC and raise awareness through promotion within and outside the city, billboards about the accelerator, including the ILC, have been erected along the major national and prefectural roads in the city.

Billboards with messages of support for the ILC have also been erected on the outside walls of the overpass at the east entrance of Ichinoseki Station. In addition, ILC panels and banners have been displayed at coming-of-age ceremonies, industrial fairs and other events.



## ILC Diorama (2013)

In order to promote the ILC to bullet train passengers, an ILC diorama has been set up in the Tohoku Shinkansen concourse of JR Ichinoseki Station. The diorama is 40cm high, 1.8m wide and 30cm deep and features a model of the proposed underground accelerator and particle measurement equipment. The backdrop is an image of space with the words, "A next-generation particle accelerator which will solve riddles about the creation of the universe—Let's Bring the International Linear Collider to Tohoku!" As well, when a switch is pressed, LED lights show the progression of the particles through the accelerator and the reaction of the measurement device in the center when they collide. Along with the diorama, a sample of granite from the Kitakami Highlands is also displayed.



## ILC Illustration Exhibition (2014)

The "ILC Illustration Exhibition", a display of conceptual images of the ILC, was held to raise awareness, and also so that the citizens of Ichinoseki could have a concrete idea of what the ILC is. 17 A1 size (594mm x 841mm) ILC-related images were exhibited. The illustrations were distributed to the ILC promotion department of the main city office and branch offices, and were displayed at various regional events throughout the area.

## Badges (2013)

Decorative badges were created to increase excitement about the opportunity of making the ILC a reality. The badges are 1.5cm high and 3cm wide, and feature the words "ILC", "Iwate" and "Ichinoseki". The 3 "I"s are lined up diagonally, and a green color is used for "ILC" and the "I"s, to symbolize the hope that this world-leading research will move forward in this region rich in the greenery of nature. In the upper right corner is part of a red circle, echoing the Japanese flag, in the hopes that the ILC plan will become a national project. These badges are distributed free of charge at all city offices (main city office and branches)



## Plastic file folders (2013), message pens (2014), memo pads (2014)

A series of ILC-related goods has been created and is distributed at events held within the city.

# Regional Efforts

Initiatives supporting efforts to attract the ILC to the area are carried out throughout the city, mostly by elementary and middle schools, local councils and various other groups.



## ILC Billboard (2014)

At Ohara Middle School, a billboard has been erected in cooperation with the PTA to support and raise awareness about the ILC. The billboard was designed by Natsuki Murakami, a third year student at the school. Entitled "Three generations enjoying the ripple effect of the ILC", it was placed on a 130m wall on the premises of the Yamatomo Construction Company (in the Ohara of Daitocho). The billboard is 1.8m high and 5.5m wide. It was created together by the student council and Mayor Katsube and erected on August 20, 2014. Panels featuring slogans and English messages devised by the students were also erected at the site. They have had a great promotional effect on people who have come to observe the site.



## ILC Flower Beds (2013)

In an initiative aimed at uniting the city's residents, local councils throughout Ichinoseki have created ILC-themed flower beds. Every year, the 13 local councils of the Kiyota area of Senmayacho create a series of promotional flower beds along National Road 284 on the subject of the children of Kiyota Elementary School. In 2013, an 800m<sup>2</sup> flower bed with 9,000 flowers of 35 different types was planted, with the theme of "Happy first year students with the ILC", showing the particle collision experiments at the ILC surrounded by children playing happily. (See photo above) Also, the Hotokezaka Council from the Iwashimizu district of Senmayacho spelled out the letters "ILC" in brightly-colored flowers. A billboard expressing a deeply held hope that the ILC will become a reality was erected.



## ILC Stickers (2013)

To support the realization of the ILC, the Ichinoseki branch of the Iwate Prefectural Taxi Association created a set of PR stickers. The stickers featured the message "Make the International Linear Collider Plans a Reality!" in yellow text against a blue background. These were affixed to the backs of taxis, and they helped to raise awareness among the local population and taxi users including tourists. The Ichinoseki branch of the Iwate Prefectural Truck Association created ILC stickers for display on their trucks. The stickers featured an image of the accelerator along with the text "Welcome ILC". Affixed to the backs and sides of trucks, they served as mobile billboards promoting the realization of the ILC across Japan.

## ILC Flag (2013)

The Ichinoseki Machizukuri Company (Kenzo Fukuhara, President and CEO) created flags of support to promote the realization of the ILC. These were displayed on streetlights running along Omachi-dori Street for approximately 600 meters from the west exit of JR Ichinoseki Station to the Jishumachi intersection. The flags were 120-140cm in height and 40cm wide. They feature the text "Bring the ILC International Linear Collider to this area!" on a green background, and incorporate the design of the promotional badges. The support flags were flown throughout the year and increase excitement in both shoppers and general citizens about the opportunity of making the ILC a reality. At the site, ILC-inspired breads and roll cakes, created by special needs clients of the Daito area social welfare service office's Shippo-kan were also sold. Visitors to the event gained a deeper understanding of and interest in both making the ILC a reality, and the internationalization of the region.



## Daito ILC MATSURI Festival (2014)

On December 13, 2014 the "Daito ILC MATSURI – Let's Learn About the ILC and Foreign Culture!" festival, under the sponsorship of the community centers of six districts in the Daito area, was held in the Shippo Hall of the Daito Community Center. A wide variety of events were held, including the exhibition and awards ceremony for an ILC-themed poster contest and an exhibition of the posters, lectures on international exchanges, the display of ILC illustrations created by CG illustrator Rey.Hori, and miniature ILC models. At the site, ILC-inspired breads and roll cakes, created by special needs clients of the Daito area social welfare service office's Shippo-kan were also sold. Visitors to the event gained a deeper understanding of and interest in both making the ILC a reality, and the internationalization of the region.