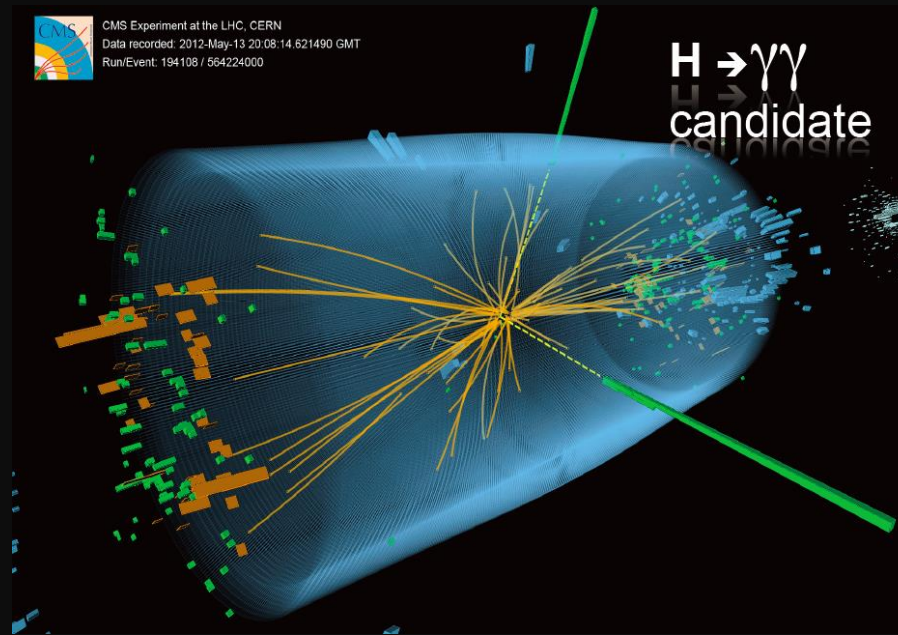


Tohoku Forum for Creativity - a Pilot Program -

‘Particle Physics and Cosmology
after the Discovery of the Higgs boson’

Discovery of a Higgs-like boson

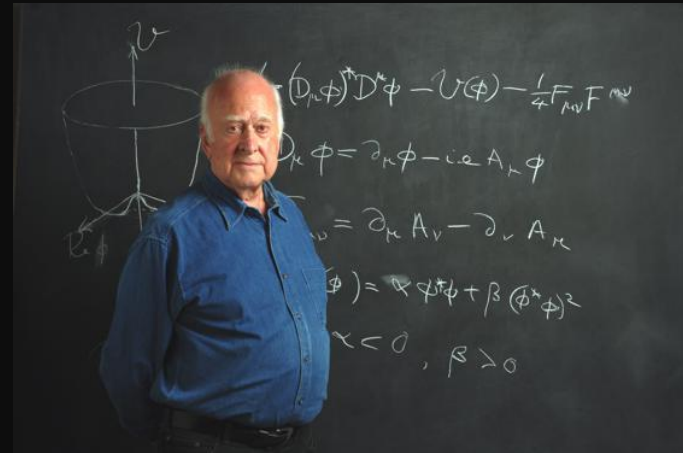


- ▶ July 2013 : observation of a new particle consistent with Higgs
- ▶ Dec 2013 : discovery of a Higgs-like particle

Nobel Prize in Physics 2013



Francois Englert



Peter Higgs

- ▶ The fine-tuning problem of the SM became **real**. (unless ‘multiverse’)
- ▶ The problem of **missing dark matter** in the SM became acute
- ▶ and more ...
- ▶ : Compelling reasons for the next step.

A new era of particle physics has begun!

The ILC (International Linear Collider)

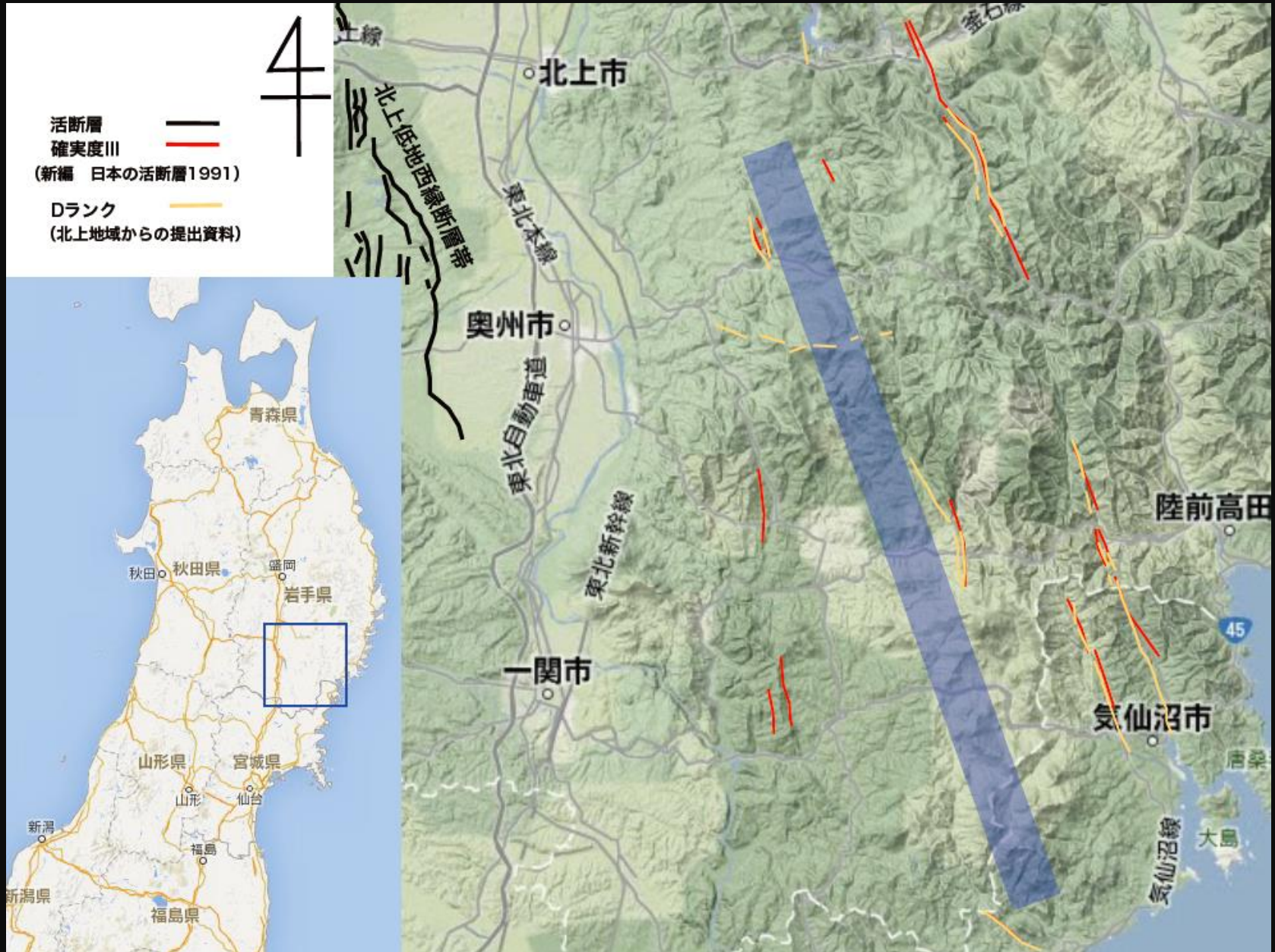
The ILC is designed to lead the new era

Japanese ILC site selection

The ILC site evaluation committee of Japan has assessed the two candidate sites based on technical and socio-environmental criteria.

‘The Kitakami site is evaluated to be the best domestic candidate site for the ILC’ (Aug 23, 2013)

Kitakami Route



Science Council of Japan

Report submitted : Sep 30, 2013

- ...we fully acknowledge the necessity and academic value of an electron-positron collider that is complementary to the LHC.
- ...the Science Council of Japan proposes that the Japanese government appropriate necessary fund to study various issues toward judging the advisability of implementing the ILC project, and intensively conduct examinations and studies for 2 to 3 years by a group consisting of experts outside of the relevant field and related government offices.
- In parallel with the above study and examination, negotiations should be conducted with research laboratories and funding bodies of primary countries and regions to clarify the issues such as the international cost sharing.

Science Council of Japan

Important issues to be examined (by the expert committee) include:

- (1) A clearer strategy of the particle physics studies at the ILC with the upgrade plans at the LHC in mind.
- (2) A budget framework that does not stagnate the efforts on various national problems and progresses in other academic fields.
- (3) International cost sharing.
- (4) Form of domestic structure centered around the researchers at KEK and universities.
- (5) Personnel and human resources needed during the construction and operation periods, in particular, the leadership material.

~ Best we can could hope from the committee

Working Groups

- Group A : Models beyond the Standard Model
- Group B : Cosmology
- Group C : Sensitivities of Higgs, top quark and EW and BSM searches at the ILC
- Group D : ILC Energy Extendability beyond 1TeV at the Kitakami Mountain Site

with Joint sessions

- Group E : On our universe (for non-experts)