

Interim Report to MEXT

Status and Interpretation

Ties Behnke, ILC project meeting

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Background

- Expert panel of scientists (no ILC scientist is part of this) from different areas has been asked to review the case for the ILC
 - Is the science first class and worth it?
 - Is the project mature enough to be build
 - Are the costs ok?
 - Can we do it?
- Final report expected for spring 2016, interim report on scientific case published August 2015
 - This is a report to the MEXT, not by MEXT
 - This is not the position of the japanese government

Summary of report

Based on slides by Sacchio Komamiya at LP2015

1. The scientific merits of ILC are appreciated.
 1. Precision studies of Standard Model
 2. Discovery potential beyond the SM and the energy reach
2. The evaluation of the final merits depend on the LHC run II.
 1. ILC and LHC are complementary
 2. Some doubts are raised that the scientific case of ILC is strong enough for the investment without a clearer picture from the LHC Run II
3. A number of recommendations have been formulated which should be used by MEXT to judge the project.

Recommendations

Recommendation 1: The ILC project requires huge investment that is so huge that a single country cannot cover, thus it is indispensable to share the cost internationally. From the viewpoint that the huge investments in new science projects must be weighed based upon the scientific merit of the project, **a clear vision on the discovery potential of new particles as well as that of precision measurements of the Higgs boson and the top quark has to be shown** so as to bring about novel development that goes beyond the Standard Model of the particle physics.

Recommendation 2: Since the specifications of the performance and the scientific achievements of the ILC are considered to be designed based on the results of LHC experiments, which are planned to be executed through the end of 2017, **it is necessary to closely monitor, analyze and examine the development of LHC experiments. Furthermore, it is necessary to clarify how to solve technical issues and how to mitigate cost risk associated with the project.**

Recommendation 3: While presenting the total project plan, including not only the plan for the accelerator and related facilities but also the plan for other infrastructure as well as efforts pointed out in Recommendations 1 & 2, **it is important to have general understanding on the project by the public and science communities.**

Summary by Sacchio

- ILC is a truly global project. ICFA oversees the project.
- ILC is complementary/synergic to the LHC (including HL-LHC) .
Clean environment, energy extendability, beam polarization, energy scanning
- Discovery of physics beyond “the Standard Model” is anticipated at ILC through precise Higgs/top studies, new particle searches.
- The ILC accelerator technology is mature and solid.
i.e. superconducting RF, beam focusing at collision
- Japan is seriously investigating hosting the ILC project as in the official process. Sign of willingness to participate in the project from governments outside Japan is essential.
- In Japan, the Federation of Diet Members, Industrial sectors, local governments powerfully support the ILC project.

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g(**We make ILC inevitable !**