

国際リニアコライダー（ILC）に関する有識者会議の議論

ILC推進会議

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- 第2回目の会議が11月14日に開催された。
- そこでは、2つの分科会からの審議状況の報告を元に議論が行われた。
- 素粒子原子核物理作業部会からは、ILCの物理の意義を、LHCの成果を含めて議論中(駒宮さんの発表参照)
- 技術設計報告書（TDR）検証作業部会は、コストレビューの中間報告(山本さんの発表参照)

有識者会議での論点

- 先端科学の問題で専門的にな議論が続いているが、その中でだんだん共通認識が生まれてきている印象。
- LHCの後追いをしている印象
 - LHCとの比較に重点を置いた観点での資料であるため

今後の課題:

- **国民の理解が得られるよう、一般の人にもわかる様な説明を**
- いつ判断すべきか(今か、LHCの結果をどこまで見てからかなど)を、はっきりさせて欲しい。
- 国際的な機関が来るということのメリットなども指摘しては。
- どのような国際機関になるのかの見通しを。リーダーシップをとっていけるのかという観点も
- いろんな科学の分野があってそれぞれに重要課題があるのだから、これをやるには国民と強いサポートが必要。イノベティブな点でどんなところがあるのかもきちんとまとめてほしい
- 国際的なシェアのしかたは？ → 事務局の調査もあるので次回はその辺の資料も欲しい。
- KEKの見学 -> 1月9日、
- SSCがだめになった理由の考察 -> 1月8日
- → このような点をまた分科会で議論してもらって、次の有識者会議ではこの辺の見通しをたてたい。
- (来年春?)

参考資料

- 2014年12月12日のCERN CouncilのOpen Sessionで、ECFA議長のManfred KrammerからECFA報告があり、そこで、ヨーロッパでのILCへの取り組みが紹介されている。
- かなり客観的(かつ好意的)に書かれているので紹介したい。
- 原本は

<http://indico.cern.ch/event/354906/>

からとれる。

(Open Sessionのスライドのみ一般公開されている)

Report from the European Committee for Future Accelerators

M. Krammer – ECFA chair
HEPHY, Vienna, Austria

- Plenary ECFA and Restricted ECFA Meetings
- ECFA supported Workshops, Studies and Schools
- RECFA Country Visits
- Other Activities of ECFA/RECFA
- ICFA matters
- Schedule 2015

ECFA Meetings 2014

Plenary ECFA

- July 24/25, 2014, DESY
- November 20/21, 2014, CERN

Restricted ECFA

- April 10/11, 2014, Tel Aviv/Jerusalem, ISR ← Country visit
- May 9/10, 2014, Bonn, D ← Country visit
- July 24, 2014, DESY
- November 7/8, 2014, Rutherford Lab, UK ← Country visit
- November 20, 2014, CERN

ECFA supported Workshops, Studies and Schools

ECFA HL-LHC Experiments Workshop



1st Workshop: 1-3 Oct. 2013, Aix-les-Bains, F

<http://indico.cern.ch/event/252045/>

First meeting of the four LHC experiments, together with the accelerator and theory communities

Summary document:

ECFA/13/284 <http://cds.cern.ch/record/1631032/>

2nd Workshop: 21-23 Oct. 2014, Aix-les-Bains, F

<http://indico.cern.ch/event/315626/>



2nd ECFA HL-LHC Experiments Workshop

Again a very efficient and useful workshop!
250 registered participants.

Many synergies and joint projects between the experiments are identified and being conducted.

A summary document will be written and will be presented to Plenary ECFA.

Discussion on a 3rd workshop has started, possibly in April/March 2016.



ECFA Study for Linear Collider Physics and Detectors

- Study started as ECFA/DESY Study on Physics and Detectors for a Linear Collider in 1996!
- The study was prolonged by PECFA November 2013 for three years and the mandate for the chair of the ECFA study was updated and **Juan Fuster (IFIC-Valencia, Spain)** was endorsed for a second period of three years.
- The ECFA study is closely connected to the Linear Collider Collaboration (LCC), with the chair of the ECFA study being the European Contact in the research directorate.

European Linear Collider Forum

To facilitate the communication between the European members of Linear Collider Board (LCB*) and the European linear collider community the European LC Forum was initiated by ECFA and launched beginning of 2014.

Web site (for information and subscription): <http://elcf.desy.de>

Home Meetings Contact

European Linear Collider Forum

European Linear Collider Forum

Mandate of the European Linear Collider Forum

The European Linear Collider Forum (ELCF) was created by ECFA in order to channel European discussions concerning future linear colliders and to facilitate input for the international Linear Collider Board (LCB) meetings.

Participation in the ELCF

Participation in the ELCF is open to all physicists working on linear collider projects in Europe. Especially senior colleagues are encouraged to participate.

News and upcoming meetings

The next meeting of the ELCF is scheduled for Tuesday, 11 February 2014, 10:00 CET.

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- Coordinated by J. Mnich (DESY)
- About 100 colleagues have meanwhile subscribed to the forum.
- Six telephone conferences in 2014 – always before and after an LCB meeting to allow a discussion of the issues on the LCB agenda.
- Very successful start – interesting discussions and in my view fulfills its purpose of better informing and involving the community.

*The LCB is the steering committee of the Linear Collider Collaboration (LCC).

Some news from the Linear Collider

- ILC Project Office has been set up at KEK for the interaction with the Japanese government and with the LCC
- MEXT expert committee established (13 members)
 - Report to be completed by FY2015 (i.e. end of March 2016)
 - The topics to be evaluated includes:
 - Physics case of the ILC
 - Total budget and international sharing
 - Prospects for securing necessary human resources during construction and operation
 - Domestic organization for the ILC
 - Social and economic effects by siting the ILC in Japan
- Meetings on ILC between Japanese officials and their counterparts in the US. The US-Japan Friendship Caucus issued a joint statement calling for the early creation of a task force to further the ILC project.
- Three people from the Nomura Research Institute in Japan were present at the current ICFA Seminar; they are visiting major world HEP labs; their main interest is in technology spin-offs from the ILC.

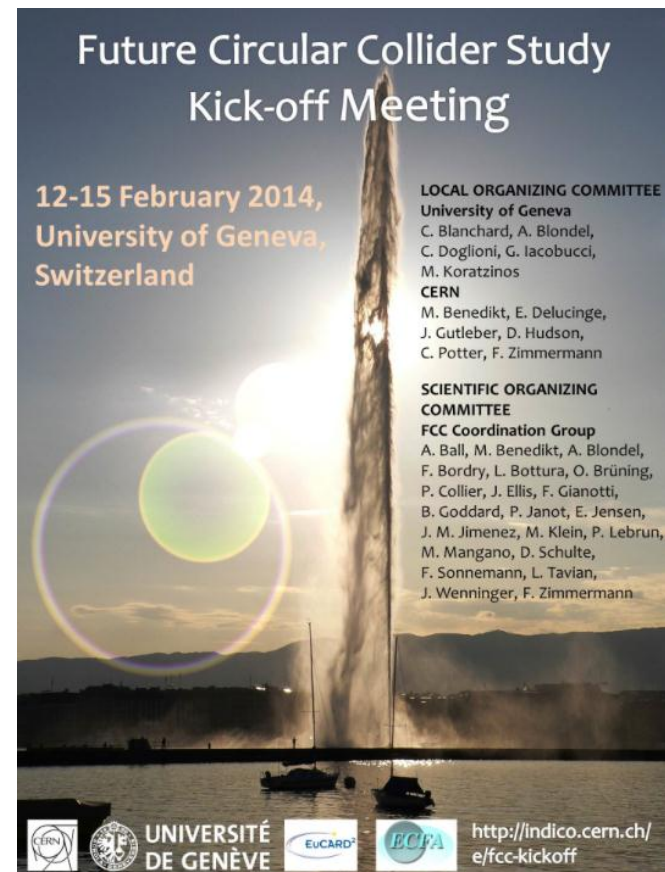
Future Circular Collider Study (FCC)

Launch of an international conceptual design study for Future Circular Colliders
(under the auspices of ECFA)

Kick-off meeting 12-15 February 2014,
University of Geneva

<http://indico.cern.ch/event/282344/>

330 registered participants



Future Circular Collider Study (FCC)

Good progress is made in forming an International FCC collaboration.

- MoUs signed with many institutions
- Preparation Meeting for the International Collaboration Board (Sept. 9/10, CERN): L. Rivkin appointed as interim chair

Main technology R&D areas have been identified and a work plan is being established with potential partners.

Next Meeting:
FCC week, March 23-27, 2015,
Washington DC, USA



Instrumentation School in Serbia

University of Novi Sad, Serbia

September 8-13, 2014

Jointly organised by CERN, the ICFA Instrumentation Panel and ECFA

The school was initiated during a RECFA country visit to Serbia.

60 students participated in lectures and laboratory courses (1/3 from Serbia, 1/3 from the Danube region, 1/3 international).

This 1 week school is a very successful format for the promotion of detector physics.

Danube School
on Instrumentation
in Elementary Particle
& Nuclear Physics

UNIVERSITY OF NOVI SAD, SERBIA
September 8-13, 2014

The school is an equal opportunity event intended for MSc, PhD and Postdoc students who want to acquire hands on experience in different detector technologies used in Particle Physics and Nuclear Physics. Researchers, who are actively involved in the field and are recognized experts in detector R&D, will give lectures and state-of-art laboratory sessions. Students are encouraged to attend, contribute and share their experience.

Review Talks

- Higgs Boson: from QED to LHC
- Future Challenges in Physics
- The Linear Colliders Challenges
- Neutrino Physics
- The Challenge of B-physics and rare decay events
- Astro-particle and dark matter searches
- Nuclear Physics

Accompanied by lectures and laboratory "hands-on" practice on detector techniques both in particle and nuclear physics.

INTERNATIONAL ADVISORY COMMITTEE

- C. Alexa, IFIN-HH, Bucharest, Romania
- P. Bloch, CERN
- V. Briggiani, Rudjer Boskovic Institute, Zagreb, Croatia
- G. Casse, University of Liverpool, UK
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- M. Planinic, Faculty of Sciences, Zagreb, Croatia

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- D. Popović, University of Belgrade
- G. Štajnović, University of Novi Sad
- D. Špaček, University of Belgrade
- M. Vuković, University of Novi Sad (School Director)

More information and registration:
<http://cern-danube-school.uns.ac.rs>

Deadline for applications:
June 15th 2014





RECFA Country Visits

The purpose of these visits, which are made to each CERN Member State in turn, is to assess particle physics and related disciplines in the country and to suggest improvements.

The recommendations are made both to the physics community and to the government.

Visits in 2014:

- **Israel, April 10/11 (Tel Aviv/Jerusalem)**
- **Germany, May 9/10 (Bonn)**
- **United Kingdom, November 7/8 (RAL)**

Midterm reports: Belgium and Finland (PECFA July 25, 2014)

Austria (PECFA November 20, 2014)

Other activities of ECFA / RECFA in 2014

EPS-HEPP Board

Organisation of a joint ECFA - EPS-HEPP session during the EPS conference, 25 July 2015 in Vienna

Following a discussion in the EPS-HEPP board and RECFA the theme of this session was decided to be:

Connecting scales: bridging the infinities

A draft of the agenda is being discussed.

Evaluation of Scientists in HEP

Joint working group by EPS-HEPP Board and RECFA

Members: M. Cavalli-Sforza, K. Jakobs, G. Wormser (coordinator), C.E. Wulz,
M. Krammer (ECFA chair), T. Lhose (EPS-HEPP chair)

Mandate: prepare document with recommendations (guidelines) for the evaluation of scientists from High Energy Physics

The document will have two parts: 1st part for the HEP community
2nd part for outside evaluators

Timeline:

- Skeleton presented to EPS-HEPP Board (15 Oct.) and RECFA (7 Nov.).
- Status presented to Plenary ECFA 20/21 November 2014
- 1st draft January 2015
- Draft circulated to HEP and non HEP circles for comments
- Endorsement of final document by PECFA July 2015

ICFA Matters

Meetings in 2014:

- 20/21 February, DESY, Hamburg
 - 6 July, Valencia during ICHEP
 - 27 October, Beijing, during ICFA seminar
- ICFA meetings scheduled at same day as **Linear Collider Board (LCB)** meetings because of large overlap of participants

Members of ICFA (Dec. 2014)

CERN Member States:

R. Heuer

M. Krammer

J. Mnich

USA: I. Shipsey

D. MacFarlane

N. Lockyer (Chair)*

Japan: T. Mori

A. Suzuki

Russia: A. Bondar

S. Ivanov

Canada: M. Roney

China: Y. Wang

Other Countries: L. de Paula

V. Matveev

A. Roy

IUPAP-C11: H. Aihara

Secretary: R. Rubinstein

* J. Mnich, ICFA chair as of January 2015

ICFA Matters

Following reports ICFA discussed

- Roadmaps in particle physics from all 3 regions:
Asia, Europe, US
- Future large international accelerator facilities:
HL-LHC, ILC, CLIC, FCC, CEPC

and issued an ICFA statement on global planning for particle physics.

ICFA Statement

ICFA endorses the particle physics strategic plans produced in Europe, Asia and the United States and the globally aligned priorities contained therein.

Here, ICFA reaffirms its support of the ILC, which is in a mature state of technical development and offers unprecedented opportunities for precision studies of the newly discovered Higgs boson.

In addition, ICFA continues to encourage international studies of circular colliders, with an ultimate goal of proton-proton collisions at energies much higher than those of the LHC.

ICFA Seminar

11th ICFA seminar at IHEP, Beijing, on 27-30 October 2014

<http://icfa2014.ihep.ac.cn>



The Seminar takes place every three years with the aim of bringing together government officials involved in strategic decisions for High Energy Physics (HEP), representatives of the major funding agencies, the directors of major HEP laboratories, and leading scientists from all of the regions of HEP activity.

Next ICFA seminar 2017 at TRIUMF (Vancouver)

News from ICFA Chair

Nigel Lockyer's term ends in December 2014

Appointment of the next ICFA chair (rotation scheme brings the ICFA chair back to Europe):

Joachim Mnich (DESY)



PECFA/RECFA Meetings in 2015

Plenary ECFA meetings:

- 97th PECFA July 25 in Vienna during EPS conference
Joint meeting with the EPS HEPP-Board “*Connecting scales: bridging the infinities*”
- 98th PECFA November 19/20 at CERN

RECFA country visits:

- Czech Republic March 27/28
- Portugal May 15/16
- Greece October 2/3

Next ECFA chair

Period January 2015 – December 2017

Procedure:

- Call for candidates PECFA/RECFA
- Election in RECFA by representatives of all CERN member states
- Endorsement in the 96th plenary ECFA meeting Nov. 20, 2014 (unanimously)

Halina Abramowicz (Tel Aviv University, Israel)



Acknowledgements

Many thanks for allowing me to be part of the CERN Council for the last three years.

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Thank you for your attention
and Happy Holidays!

