

RELATIONS OF ICFA/LINEAR COLLIDER BOARD and the scientific community at large

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International Committee for Future Accelerators (ICFA)

Aims, as redefined in 1985, are:

- To promote international collaboration in all phases of the construction and exploitation of very high energy accelerators.**
- To organize regularly world-inclusive meetings for the exchange of information on future plans for regional facilities and for the formulation of advice on joint studies and uses.**
- To organize workshops for the study of problems related to super high-energy accelerator complexes and their international exploitation and to foster research and development of necessary technology.**

Recent Activities:

▶ **ICFA Meetings**

Last meeting (69th), 21-22 February, 2013, TRIUMF

Next meeting, 26 June, 2013, San Francisco

Followed by 20/21 February 2014 at DESY

▶ **ICFA Panels**

Currently 4 panels, 2 committees, 1 study group

▶ **ICFA Seminars**

Every three years, a Seminar on Future Perspectives in High-Energy Physics

10th ICFA Seminar, CERN, on 3-6 October 2011

11th will be at IHEP/Beijing in October 2014

ICFA Works through the following panels

- ICFA Instrumentation Innovation and Development Panel
(Chair— Ariella Cattai, CERN)
- ICFA Beam Dynamics Panel
(Chair—Weiren Chou, Fermilab)
- ICFA Panel on Advanced and Novel Accelerators
(Chair— Mitsuru Uesaka, Tokyo, Brigitte Cros, Univ Paris-Sud from April 2013)
- ICFA Neutrino Panel
(Chair - Kenneth Long, Imperial College London)
- ICFA Standing Committee on Interregional Connectivity
(Chair— Harvey Newman, Caltech)
- International Linear Collider Steering Committee
(Chair— Jon Bagger, Johns Hopkins) replaced by
- Linear Collider Board
(Chair - Sachio Komamiya, Tokyo)
- ICFA Study Group on Data Preservation in High Energy Physics
(Chair - Cristinel Diaconu, Marseille)

Instrumentation Panel

The mission of the Panel is to promote research on and development of instrumentation for use in future particle physics experiments which engages physicists from all parts of the world.

Organization of the biennial ICFA Schools presented to advanced graduate students and postdoctoral scientists.

Development and maintenance of Web-based material on instrumentation. Included are tutorials on the various techniques as well as information on the operating characteristics of the main detector components now in use.

ICFA approved the following:

The organization of a forum to discuss future global detector R&D

The XII ICFA School in Bogota in December 2013

The joint ICFA/ECFA School in Serbia in September 2014

Beam Dynamics Panel

To encourage and promote international collaboration on beam dynamics studies for present and future accelerators.

Activities:

- **ICFA Workshop “Accelerators for a Higgs Factory: Linear vs. Circular” (HF2012):** (e^+e^- , muon, photon)

14-16 November, 2012, Fermilab,

- **ICFA Advanced Beam Dynamics Workshops and Mini-Workshops**

Two ICFA Advanced Beam Dynamics Workshops:

➤ **51st: Future Light Sources FLS2012**

March 5-9, 2012, Jlab, USA

➤ **52nd: High Intensity High Brightness Hadron Beams HB2012**

September 17-21, 2012, Beijing, China

◀ **Three ICFA Mini-Workshops:**

➤ **Breakdown Science and High Gradient Technology**

April 18-20, 2012, KEK, Japan

➤ **High Order Mode Diagnostics and Suppression in SC Cavities**

June 25-27, 2012, Cockcroft Institute, UK

➤ **Deflecting/Crab Cavity Research and Applications in Accelerators**

- **ICFA Beam Dynamics Newsletter**
 - **1987 – present (26 years)**
 - **The only regular publication of ICFA**
 - **Three issues per year**
 - **59 issues published**
 - **Each issue has a theme**

- **Biennial panel meeting during IPAC13**
- **2012 and 2013 Linear Collider School**
 - International Accelerator School for Linear Collider,**
27 Nov-8 Dec, RRCAT, India.
 - Next December 4-15, 2013, Antalya, Turkey**

ILCSC → Linear Collider Board

The GDE and RD accomplished their mandates by producing the TDR and DBD. The ILCSC has been replaced by the newly formed Linear Collider Board.

Purpose

1. The Linear Collider Board (LCB), as a sub-panel of ICFA, will promote the construction of an electron-positron linear collider and its detectors as a world-wide collaborative project.
2. The LCB will be responsible for the science, technology, outreach and organization in pursuit of the linear collider project.

Mission

The LCB will

1. establish a Linear Collider Directorate (LCD), headed by a Linear Collider Director.
2. provide oversight to the LCD and work with the Funding Agencies for Large Colliders (FALC)
3. set up a Project Advisory Committee (PAC) and monitor the progress of the linear collider activities through LCD and PAC Chair
4. monitor the outreach activities of the LCD, regional groups, and others to the scientific community, industry and public.

Modalities

1. The Linear Collider Director will appoint the members of the Linear Collider Directorate. Initially, there will be three Associate Directors leading divisions that will carry forward design and R&D on (i) an SCRF linear collider, (ii) a room-temperature two-beam linear collider, and (iii) the physics and detectors for these machines. There will also be three coordinators as liaisons to each of the three regions.
2. The activities of the three divisions under the Linear Collider Directorate will be essentially those of the ILC Global Design Effort, the CLIC Collaboration, and the physics and detector activities associated with CLIC and the ILC Research Directorate.

The Linear Collider Director is Lyn Evans, who has chosen his Deputy Director and Associate Directors, and is working to complete the remainder of the Directorate.

The “ILC Event” will be held on 12 June 2013, in all three regions, to celebrate TDR completion and handing over of reviewed TDR from GDE/RD to LCB(LCD), to highlight the ILC progress and future, and to expose a wider community to the ILC goals.

Linear Collider Board

Sachio Komamiya, Tokyo, Chair

Americas

Jonathan Bagger, Johns Hopkins
The Fermilab Director (Pier Oddone)
David MacFarlane, SLAC
Lia Merminga, TRIUMF
Hugh Montgomery, Jefferson Lab

Asia

Jie Gao, IHEP
Rohini Godbole, IISc
Sunkee Kim, RISP
Atsuto Suzuki, KEK
Yifang Wang, IHEP

Europe

The CERN Director-General (Rolf Heuer)
The DESY Director of Particle Physics (Joachim Mnich)
Francois Le Diberder, IN2P3
The JINR Director (Victor Matveev)
Lenny Rivkin, PSI
(Secretary: Roy Rubinstein, Fermilab)

European Strategy on next Collider

To be in a position to propose a large post-LHC project at CERN and undertake studies in a global context with emphasis on pp and e⁺e⁻ high energy frontier machines

There is a strong physics case for an e⁺e⁻ collider that can study the Higgs and whose energy can be upgraded, with possible European participation in a Japanese proposal

Europe should be at the forefront of long baseline neutrino experiments, while exploring global opportunities for such a facility

Japan Association of High Energy Physicists (JAHEP) basic strategy for future projects.

JAHEP proposes that ILC be constructed in Japan as a global project with the agreement of and participation by the international community in the following scenario:

(1) Physics studies shall start with a precision study of the "Higgs Boson", and then evolve into studies of the top quark, "dark matter" particles, and Higgs self couplings, by upgrading the accelerator. A more specific scenario is as follows:

(A) A Higgs factory with a center-of-mass energy of approximately 250 GeV shall be constructed as a first phase.

(B) The machine shall be upgraded in stages up to a center-of-mass energy of ~500 GeV, which is the baseline energy of the overall project.

(C) Technical extendability to a 1 TeV region shall be secured.

(2) A guideline for contributions to the construction costs is that Japan covers 50% of the expenses (construction) of the overall project of a 500 GeV machine. The actual contributions, however, should be left to negotiations among the governments.

JAHEP Strategy (contd..)

It is important to complete and start the SuperKEKB including the detector, as scheduled.

Some of the medium/small scale projects currently under consideration should be promoted in parallel.

Such as:

- neutrino physics
- flavour physics experiments such as muon experiments at J-PARC
- searches for dark matter and neutrinoless double beta decays
- observations of CMB B-mode polarization
- dark energy

ICFA Panel on Advanced and Novel Accelerators Activity and Status

To promote and encourage international collaborations/workshops/schools on advanced and novel accelerators.

Especially emphasize advanced, compact accelerators and their applications not only to high energy physics, particle physics, nuclear physics but also to medical physics, nondestructive evaluation, security and so on, in order to support accelerator science and technology.

**Laser and Plasma Accelerator Workshop 2013 (LPAW 2013),
September 2-6, Fort Aguada, Goa, India**

Workshop Chair: Zulfikar Najmudin (Imperial College, London)

**Local organizing Chair: Bob Bingham (Rutherford-Appleton
Lab./U.Strathclyde)**

**Local organizing co-Chair: Rajeev Pattathil (Rutherford-Appleton Lab/
TIFR, Hyderabad)**

**Physics and Applications of High Brightness Beams:
Towards a Fifth Generation Light Source
San Juan, Puerto Rico, March 25-28, 2013**

This latest version of the ICFA-sponsored workshop series on *Physics and Applications of High Brightness Beams* further refines the previous mission of the meeting, to examine the state-of-the-art in high brightness beam physics and technology as it is applied in advanced accelerators and light sources, to embrace a more ambitious agenda — the merging of the application fields.

The resulting discussions are intended to provide tangible and timely guidance on how to proceed with a highly stimulation and challenging mission: the marriage to advanced accelerators and light sources.

ICFA Neutrino Panel (Recently formed)

“To promote internal cooperation in the development of the accelerator based neutrino oscillation program and to promote international collaboration in the development of a neutrino factory as a future intense source of neutrinos for particle physics experiments.”

ICFA Neutrino Panel				
LONG	Kenneth	UK	Imperial	Experiment; chair
The Americas				
TANAKA	Hirohisa	Canada	Institute of Particle Physics	Experiment
FUNCHAL	Renata	Latin America	University of Sao Paulo	Theory
GEER	Stephen	USA	FNAL	Experiment, Accelerator
de GOUVEA	Andre	USA	Northwestern	Theory
ZELLER	Sam	USA	FNAL	Experiment
Asia				
KOBAYASHI	Takashi	Japan	KEK	Experiment
SHIOZAWA	Masato	Japan	Tokyo	Experiment
KIM	Soo-Bong	Korea	Seoul National University	Experiment
MONDAL	Naba	India	TIFR	Experiment
CAO	Jun	China	IHEP	Experiment
Europe				
MEZZETTO	Mauro	Italy	Padova	Experiment
DUCHESNEAU	Dominique	France	CNRS/IN2P3	Experiment
MALTONI	Michele	Spain	Madrid	Theory
WASCKO	Morgan	UK	Imperial	Experiment
SOBCZYK	Jan	Poland	Wroclaw	Theory

Study Group on Data Preservation in High Energy Physics

Priority:

To preserve the full capacity to perform analysis on data from experiments that have completed data-taking.

The DPHEP recommendations include adoption of the Open Archival Information Storage (OAIS) model for HEP long-term data preservation;

Actively participate in the Research Data Alliance and its Working Groups with the intent to influence EU, US and other funding agencies;

Build on existing contacts with other disciplines to share best practises and where possible also tools and services;

Ensure that there are sufficient resources (2013 / 2014) to allow the vision of Long-Term, Sustainable Archives to be realized.

Standing Committee on Interregional Connectivity

World internet users, now number 2.4B, of which 540M are in China and 650M have broadband.

Annual traffic growth has slowed from 65-70% to 40% due to economic reasons.

Cable capacity exhaustion has been avoided by starting 40G and soon 100G technology. There are increased 10G links, with the transition to 100G networks well underway, and 400G networks are not far away.

The Network Monitoring group now monitors 165 countries (which contain 99% of the world's population); the throughput everywhere increases exponentially, but at different rates in different regions. Lack of funding for monitoring this activity is a matter of concern.

ICFA SUPPORTS Global Coordination in Communication Outreach programme through InterAction Collaboration

Challenges ahead for 2013

Regional strategy development

LHC long shutdown

ILC GDE to LCC transition

Funding challenges everywhere

Coordinated international communication needed now more than ever

(Katie Yurkewicz, Fermilab)

Interactions.org

287,000 visits in 2012

4,200 newswire subscribers

102 newswires (press releases) issued

7,100 Twitter followers

Introducing multiple languages for selected content

The screenshot shows the homepage of Interactions.org, a website for particle physics news and resources. The header features the logo and navigation links. The main content area is titled '高能物理互联合作组织' (High Energy Physics Interconnected Cooperation Organization) and includes a list of member institutions in Chinese. A sidebar on the left contains navigation links, and a 'NEWSWIRE SIGNUP' button is visible at the bottom left.

INTERACTIONS.ORG
PARTICLE PHYSICS NEWS AND RESOURCES
A COMMUNICATION RESOURCE FROM THE WORLD'S PARTICLE PHYSICS LABORATORIES

HOME NEWS IMAGE BANK VIDEO CHANNEL SEARCH [input] [button] [SITE] [NEWS]

Logged in as: Any Collaborator || Log Me Out

高能物理互联合作组织

高能物理互联合作组织致力于支持国际粒子物理学，也为跨国的和平合作做出贡献。

互联合作网站 (www.interactions.org) 旨在成为核心的粒子物理信息资源，包括新闻发布、文章、新闻、大事记列表和图片。(万维网起源于粒子物理研究，用来支持缔造她的科学是再合适不过了。)

互联合作网站由国际高能物理合作组织各成员共同开发与维护，该组织的成员代表了欧洲、北美和亚洲的主要粒子物理实验室。本网站得到了多国科学基金机构的经费支持。

互联合作组织成员包括:

- [美国阿岗实验室 \(ANL\)](#)
- [美国布鲁克海文实验室 \(BNL\)](#)
- [法国萨克雷宇宙基本法研究所, 法国原子能机构 \(IRFU CEA-Saclay laboratory\)](#)
- [德国电子同步加速器研究所 \(DESY\)](#)
- [欧洲核子研究中心 \(CERN\)](#)
- [美国费米国家实验室 \(FNAL\)](#)
- [日本高能加速器研究机构 \(KEK\)](#)
- [意大利格兰萨索国际实验室, 意大利国家核物理研究所 \(LNGS, INFN\)](#)
- [意大利弗拉斯卡第国家实验室, 意大利国家核物理研究所 \(LNF, INFN\)](#)
- [法国核物理暨粒子物理研究所 \(IN2P3\)](#)
- [中国高能物理研究所 \(IHEP\)](#)
- [日本东京大学数物联携宇宙研究所 \(IPMU\)](#)
- [意大利国家核物理研究所 \(INFN\)](#)
- [俄罗斯杜布纳联合核研究所 \(JINR\)](#)

NEWSWIRE SIGNUP

Sign up for our newswire and receive the latest press releases from particle physics labs around the world.

[CLICK TO SIGN UP](#) [button]

Quantum Diaries

The screenshot shows the Quantum Diaries website interface. At the top, the title 'QUANTUM DIARIES' is displayed in a dark blue header, with the tagline 'Thoughts on work and life from particle physicists from around the world.' below it. Navigation links for 'Home', 'About Quantum Diaries', 'Latest Posts', and 'All Blogs' are visible. A row of small profile pictures of various physicists is shown below the header. The main content area features a 'HOT TOPICS' section with a sub-header 'Useful Fictions'. The article text discusses the concept of 'useful fictions' in physics, mentioning Byron Jennings and Aidan Randle-Conde. An image of two red and black gyroscopes is shown with the caption 'Not that kind of spin.' Below the article is a byline for Byron Jennings dated February 8, 2013, and a short bio of Hans Vaihinger. The right sidebar contains a search bar, a 'BLOGS' section with a dropdown menu, and a 'LABORATORIES' section listing the European Organization for Nuclear Research (CERN) and TRIUMF.

700,000 visits in 2012
140,000 visits in July
3,800 Facebook “likes”

Greatest hits

July 4: New baby boson is born

June 7: Is the moon full? Just ask the LHC operators

April 1: Physicists discovery large body orbiting Earth

April 1: New particle spotted on Tristan da Cuhna Island

July 3: Higgs seminar liveblog

Thank you!