

ICFA Nanobeam02

September 02, 2002

Monday

8:00 AM - 9:00 AM

Registration

Registration for attendees who did not register on Sunday, 17h00-19h00.

9:15 AM - 1:00 PM

Session 1 - Motivation & Overview

Chair: Aurelio Bay, University of Lausanne

09h15 Opening of workshop, greetings

09h20 Opening address

Luciano Maiani, CERN

Invited Talks:

09h35 Particle physics at future colliders

John Ellis, CERN

10h05 The Gravitational Wave Detector VIRGO

Flaminio Raffaele, LAPP

10h35 Coffee

11h05 Challenges for future linear colliders

Swapan Chattopadhyay, TJNAF

11h35 Challenges for future light sources and X-ray FELs

**Kwang-Je Kim, ANL
& U. Chicago**

12h05 Stability and ground motion

Andrei Seryi, SLAC

12h35 Innovative Technological Solutions for Future Accelerators

Joe Frisch, SLAC

1:00 PM - 2:00 PM

Lunch UNIL restaurant (included in registration fee)

2:00 PM - 6:20 PM

Session 2 - Beam Delivery, Final Focus & Collimation

Chairs: Nicholas Walker, DESY; Angeles Faus-Golfe, University of Valencia

14h00 Beam Delivery System for Pedestrians

N. Walker

14h10 New TESLA Final-Focus System

J. Payet

14h30 CLIC Beam Delivery System

F. Zimmermann

14h50 Overview of post-linac collimation in Linear Colliders

P. Tenenbaum

15h10 Simulation tools for luminosity performance

S. Redaelli

15h30 Coffee

16h00 Simulation tools for machine backgrounds

G. Blair

16h30 Muon background simulations and GEANT4

H. Burkhardt

16h50 Update on banana simulations

D. Schulte

17h10 QM limits on beam demagnification and luminosity

F. Zimmermann

17h30 Discussion: What R&D do we need?

Round-table

7:00 PM - 8:30 PM

Reception

In the building of UNIL-IPHE where the workshop takes place. Included in registration fee.

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September 03, 2002

Tuesday

9:00 AM - 12:30 PM

Session 3 - Stabilization

Chairs: Andrei Seryi, SLAC; Vladimir Shiltsev, FNAL

09h00 Vibration control feedback R&D at University of British Columbia

T. Mattison

09h20 Results of the CLIC stability study

R. Assmann

09h30 Mechanical triplet vibrations at RHIC

C. Montag

09h50 Tevatron magnet vibrations and orbit motion

V. Shiltsev

10h10 Flexible bearings for high precision positioning and stabilization

S. Henein

10h30 Coffee

11h00 Vibrational stability of NLC linac and Final Focus components

F. LePimpec

11h20 Magnet vibrations from cooling water

S. Redaelli

11h40 Electron beam stabilization experiences at the ESRF

L. Zhang

12h00 Orbit control of the SLS ring

M. Boege et al

12:30 PM - 2:00 PM

Lunch UNIL restaurant (included in registration fee)

2:00 PM - 6:30 PM

Session 4 - Interaction Region

Chair: Tom Markiewicz, SLAC

14h00 Interaction region (IR) issues and baseline design

R. Settles

14h25 Crossing angle and solenoid issues

P. Tenenbaum

14h40 Crab cavity requirements

J. Frisch

14h55 Permanent magnet (PM) issues

M. Kumada

15h10 PM quadrupole lens with variable strength

I. Iwashita

15h25 The method of temperature compensation for permanent magnet final focus quadrupole

E. Antokhin

15h40 Coffee

16h10 Super-conducting magnet issues

B. Parker

16h25 Gamma-gamma IR issues

M. Velasco

16h40 Background issues related to Nanobeams

D. Schulte

16h55 IR instrumentation - Informal Comments

N. Phinney (TBC)

17h30 Common discussion sessions 3&4:

T. Raubenheimer

Required R&D and plans

2:00 PM - 5:00 PM

Session 5 - Mini-workshop on Energy Measurement in Future Linear Colliders

Organizers and Chairs: Mike Hildreth, U. Notre-Dame; Bernd Dehning, CERN

14h00 Overview on energy calibration for LC's

M. Hildreth

14h30 Summary of SLAC energy calibration workshop

M. Hildreth

14h50 LEP energy calibration and what we learn for LC's (with subtext of making it relevant for NLC)

G. Wilkinson

15h10 The SLAC spectrometer

M. Ross (or other SLAC)

15h40 Coffee

16h10 TESLA plans

TBA

16h30 Measurement of the absolute energy at Linear Colliders using spin precession

V. Telnov

16h50 Brainstorming session

4:00 PM - 6:30 PM

Session 3b - Stabilization

Chairs: Andrei Seryi, SLAC; Vladimir Shiltsev, FNAL

16h10 Ground motion activities at DESY - An overview

C. Montag

16h30 Ground motion characterization program at SLAC

F. Asiri

16h50 2002 results from FNAL MI-8 and Aurora mine ground motion experiments

V. Shiltsev

17h10 Linear collider alignment and survey activities at Oxford University

G. Grzelak

17h30 Common discussion sessions 3&4:

T. Raubenheimer

Required R&D and plans

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September 04, 2002

Wednesday

9:00 AM - 1:00 PM

Session 6 - Mini-workshop on Laser Wire

Organizer: Grahame Blair, Royal Holloway

09:00 - 10:40 Status of Current Projects

09:00 - 09:10 Introduction/aims of mini-workshop

09:10 - 09:40 Recent status of laserwire monitor development at KEK-ATF

09:40 - 10:10 CTF2 Laserwire status

10:10 - 10:40 PETRA laserwire status

10:40 - 11:00 *coffee break*

11:00-13:00 Future directions and requirements

11:00 - 11:30 Simulation of laserwire in BDS

11:30 - 12:00 Laserwire Measurement of Emittance

12:00 - 12:30 Technical Challenges outstanding

12:30 - 13:00 Discussion

Chair: J Urakawa
G. Blair

Y. Honda
T. Lefevre
T. Kamps

Chair: M Ross
G. Penn/G. Blair
P. Tenenbaum
J. Frisch
All

1:00 PM - 2:00 PM

Lunch UNIL restaurant (included in registration fee)

2:00 PM - 6:20 PM

Session 7 - Tuning, Feedback & Diagnostics

Chairs: Phil Burrows, Oxford University; Susan Smith, Daresbury

14h00 Tuning, feedback and diagnostics at light sources TBA

14h30 Feedback experience in the SLC and PEP2 **N. Phinney/L. Hendrickson**

14h50 Algorithms and simulation results for NLC IP and linac feedback systems **L. Hendrickson**

15h10 Beam dynamics simulations, banana bunches, and IP feedback systems **G. White**

15h40 *Coffee*

16h00 Fast feedback system performance at TTF **N. Walker, TBC**

16h10 Method of correcting the LHC beta* at collision **W. Wittmer**

16h20 Linearizing the intra-train beam-beam deflection feedback **S. Smith**

16h35 Beam-beam scans within a Bunch-train crossing at a Linear Collider **S. Smith**

16h50 Instrumentation development - Test facilities and plans **M. Ross**

17h20 Report on alignment/tuning/diagnostics at ATF, and plans for JLC **J. Urakawa**

17h50 Discussion

2:00 PM - 6:00 PM

Session 8 - Generation of Low-Emittance Beams

Chairs: Leonid Rivkin, PSI; Gilbert Guignard, CERN

14h00 Sources of nanobeams: a comparison between the ATF and the NLC and TESLA designs **M. Ross**

14h40 CLIC damping ring status report **M. Korostelev**

15h00 Coherent synchrotron radiation, Fast Beam Ion Instability **T. Raubenheimer**

15h20 ATF results **J. Urakawa**

15h40 Damping ring discussions

15h50 *Coffee*

16h20 Requirements to beam sizes at photon colliders and problems of realization **V. Telnov**

16h40 Small emittance generation: flat beams **K.J. Kim**

17h00 Experimental study of Laser-Compton scattering in the non-linear regime **Y. Kamiya et al**

17h20 Development of soft X-ray source using Laser Compton scattering **R. Kuroda**

17h40 Circular accelerator low-level Radio Frequency feedback loops **E. Onillon**

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September 04, 2002 Continued

Wednesday

7:00 PM - 10:00 PM

Workshop banquet

Chateau d'Ouchy, Lausanne. Included in registration fee.

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September 05, 2002

Thursday

9:00 AM - 12:15 PM

Session 9 - Engineering Demonstration and R&D Plans

Chairs: Günther Geschonke, CERN; Witold Kozanecki, CEA/Saclay

Part 1: R&D proposals

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|-------|----------------------------------------------------------------|----------------------|
| 09h00 | A plan of ATF Final Focus Test Beam Line | J. Urakawa |
| 09h20 | NLC vibration program and LINX | T. Markiewicz |
| 09h40 | Plans and priorities for the CLIC stability study | R. Assmann |
| 10h00 | A proposal to demonstrate gamma-gamma collisions at the SLC IP | M. Velasco |

10h20 *Coffee*

Part 2: Towards a common strategy

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|-------|--------------------------------------------------------------------------|---------------------|
| 10h45 | Colliding nanobeams: What do we need to demonstrate? | T. Mattison |
| 11h00 | Linear colliders and light sources: Issues of common interest | L. Rivkin |
| 11h15 | Parameters and potential 'nanobeam' applications of test-beam facilities | S. Schreiber |
| 11h25 | Discussion (moderated by session chairmen) | |

12:15 PM - 1:00 PM

Lunch UNIL restaurant (included in registration fee)

1:00 PM - 7:00 PM

Excursion Gruyere

Included in registration fee

7:00 PM - 10:00 PM

Optional Dinner

Chalet Suisse, Lausanne. Paid on an individual basis.

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September 06, 2002

Friday

9:00 AM - 12:00 PM

Session 10 - Summary Talks by Session Chairs

Chair: Carlo Wyss, CERN

09h00 Summary session 2

09h20 Summary session 3

09h40 Summary session 4

10h00 Summary session 5

10h20 Summary session 6

10h40 Coffee

11h00 Summary session 7

11h20 Summary session 8

11h40 Summary session 9

12h00 Closing of workshop

N. Walker, A. Faus-Golfe

A. Seryi, V. Shiltsev

T. Markiewicz

M. Hildreth, B. Dehning

G. Blair

P. Burrows, S. Smith

L. Rivkin, G. Guignard

W. Kozanecki, H. Braun

12:00 PM - 1:00 PM

Lunch UNIL restaurant (included in registration fee)

1:00 PM - 2:00 PM

Optional transportation to CERN

To be reserved and paid on an individual basis.