

**26<sup>th</sup> ADVANCED ICFA BEAM DYNAMICS WORKSHOP  
ON NANOMETRE-SIZE COLLIDING BEAMS**

**(NANOBEAM 2002)**

*Lausanne, Switzerland, September 2-6, 2002*



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**Contents:**

Scientific scope and goals of workshop	2
Scientific and local organizing committees	3
Practical information	4

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## Scientific scope and goals of workshop

Accelerators have produced high-energy particle beams with sizes as small as 70 nm and with 500 nm beams in stable collision. These "nanobeams" impose stringent tolerances on the magnetic focusing and the stability of the accelerator. Future linear colliders foresee colliding high-energy particle beams with vertical spot sizes down to the 1 nm level. For the production and control of these beams many new challenges must be met.

### **The ICFA Workshop on Nanometre -Size Beams will look at:**

- Technical issues in producing and controlling particle beams with nm-size, including the Final Focus, collimation, beam instrumentation, and beam-based feedback systems.
- Disturbing effects from ground motion, magnet vibration, optics errors, etc.
- Achievable limits with present accelerator and stabilization technology.
- Possible applications of nanobeams in and beyond particle physics.

### **The workshop is addressed to:**

- The linear collider accelerator community, that relies on nm-size beams to push the frontier of particle physics.
- The synchrotron radiation accelerator community, which has extensive experience with accelerator stabilization and the control of small beams.
- The general accelerator physics community with interest in optics design, higher-order chromatic corrections, and advanced beam collimation.
- Scientists working with sub-nm stabilization, like for gravitational wave detectors, chip production, and Transmission Electron Microscopy (using low energy nanobeams).
- Scientists with interests to use high-energy nanobeams for new applications.
- Industrial companies specializing in the development of advanced active and passive stabilization equipment.

The workshop should inspire a lively exchange of advanced ideas and concepts between the scientists involved in the different areas of research. **The following goals should guide the workshop:**

- Describe a path towards proving feasibility of colliding and non-colliding nanometer-size beams, document existing solutions, and identify open questions.
- Develop a coherent program for future research and development.
- Strengthen and expand international and inter-disciplinary collaborations.

### **Mini-workshop on measurement of beam energy in linear colliders:**

A parallel session will be devoted to the precise measurement of the beam energy in linear colliders, based on the experience in existing and past accelerators.

Additional details on the scientific program will be announced on the Nanobeam web site:

**<http://www.cern.ch/nanobeam>**

## International Advisory Committee

B. Aune	CEA/Saclay	S. Myers	CERN
D. Burke	SLAC	A. Skrinsky	BINP
J.P. Delahaye	CERN	D. Trines	DESY
S. Holmes	FNAL	A. Wrulich	PSI
S.I. Kurokawa	KEK	ICFA Beam Dynamics Panel	

## International Program and Organizing Committee

R. Assmann	CERN	L. Rivkin	PSI
A. Bay	Lausanne U.	J. Rogers	Cornell U.
G. Blair	Royal Holloway	S. Russenschuck	CERN
R. Brinkmann	DESY	A. Seryi	SLAC
P. Burrows	Oxford U.	T. Shintake	KEK/RIKEN
P. Chen	SLAC	V. Shiltsev	FNAL
B. Dehning*	CERN	S. Smith	Daresbury
M. Hildreth*	Notre Dame U.	M. Syphers	FNAL
K.J. Kim	ANL	V. Telnov	BINP
M. Mayoud	CERN	N. Toge	KEK
T. Nakazato	SPRING-8	N. Walker	DESY
O. Napoly	CEA/Saclay	K. Yokoya	KEK
F. Pilat	BNL	L. Zhang	ESRF
T. Raubenheimer	SLAC	F. Zimmermann	CERN

\*Contacts for the Mini-workshop on measurement of beam energy in linear colliders.

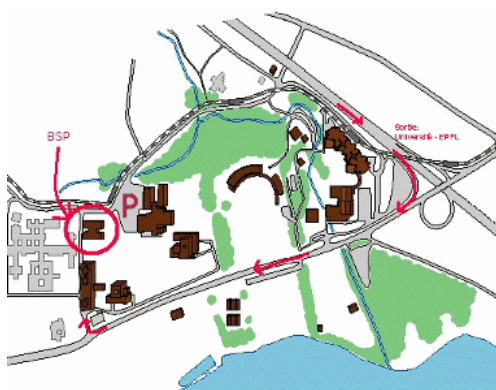
## Local Organizing Committee

R. Assmann, F. Zimmermann	(Chairmen)
E. Luthi, J. Thomashausen	(Secretariat)
A. Bay	Lausanne U.
T. d'Amico	CERN
S. Redaelli	CERN, Lausanne U.

## Practical information (preliminary)

### Location:

The workshop will take place on the campus of the University of Lausanne (UNIL) and the Swiss Federal Institute of Technology Lausanne (EPFL). Lausanne is reached by car or train in less than 40 minutes from the international airport in Geneva. The university campus is within easy reach of the city center and is located directly on the beautiful Lake Geneva with a magnificent view on the Swiss Alps. Detailed information is posted on the workshop web site.



### Hotel:

A number of hotel rooms in different categories have been reserved. A list is posted on the web site. The workshop participants should contact the hotels on an individual basis. **We strongly recommend reserving a hotel room as soon as possible.** Lausanne is a busy city and hotels can become fully booked quickly.

### Preliminary workshop organization:

Registration, Welcome drink	16h00-19h00	1 Sep 2002
Start of scientific program	9h00	2 Sep 2002
Reception	19h00	2 Sep 2002
Banquet	19h00	4 Sep 2002
Excursion	Afternoon	5 Sep 2002
End of workshop	12h00	6 Sep 2002
Visit at CERN, Geneva	Afternoon	6 Sep 2002

**Registration:**

A web site for online registration is available. **The deadline for registration is 15 July 2002**. After this date an additional fee for late registration will apply.

We strongly recommend registering and reserving an accommodation **before this deadline**, in order to avoid paying exorbitant hotel rates.

At this moment we foresee that the registration fee will include:

- Welcome drink, reception, and banquet.
- Coffee breaks.
- Excursion.
- Lunch at a university restaurant.

The registration fee is not yet finalized but will be around 250 CHF. A bank account is being opened for payment by bank transfer.

**Abstract submission:**

Abstracts can be submitted [via the web](#). **The deadline for submission of abstracts is 15 August 2002**.