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## ENSEIGNEMENT ACADEMIQUE ACADEMIC TRAINING

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Informations détaillées sur le WWW  
Information about the lectures on WWW  
<http://www.cern.ch/Training/>

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### LECTURE SERIES

15, 16, 17, 18 & 19 April

11.00 to 12.00 hrs – Auditorium

#### Medical Imaging

by D. Townsend, Univ. of Pittsburg, USA

Since the introduction of the X-ray scanner into radiology almost 25 years ago, non-invasive imaging has become firmly established as an essential tool in the diagnosis of disease. Fully three-dimensional imaging of internal organs is now possible, both for anatomical investigation and for studies which explore the functional status of the body. Powerful techniques to correlate anatomy and function are available, and scanners which combine anatomical and functional imaging in a single device are under development. Such techniques have been made possible through recent technological and mathematical advances. This series of lectures will review both the physical basis of medical imaging techniques using X-rays, gamma and positron emitting radiotopes, and nuclear magnetic resonance, and the mathematical methods used to reconstruct three-dimensional distributions from projection data. The lectures will trace the development of medical imaging from simple radiographs to the present-day non-invasive measurement of in vivo biochemistry. They will be aimed at non-specialists with a scientific background and all techniques will be extensively illustrated with appropriate examples of medical images.

## INFORMATIONS GENERALES GENERAL INFORMATION

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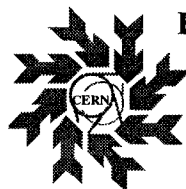
There will be an Open Day on

**Saturday 11 May 1996 from 09.00 to 18.00 hrs**

when most of CERN's experiments and high technology equipment will be on show. You can go down below ground on a guided tour of the LEP tunnel, see what virtual reality feels like, surf the World-Wide Web, do some experiments yourself at "Physics In The Street".

Further details will be provided in a forthcoming issue of the Weekly Bulletin.

Visits Service / DSU  
[Open.Day@Macmail.CERN.CH](mailto:Open.Day@Macmail.CERN.CH)



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## ENSEIGNEMENT TECHNIQUE TECHNICAL TRAINING

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Information sur les cours, dates et places disponibles sur WWW :  
Information about the courses, dates and places available on WWW :  
<http://www.cern.ch/Training/>

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### Technical Seminar

April 25, 1996 at 14.30

Room 13, Building 593

#### Magnetostrictive Force Actuators for High Precision Positioning

**V.I. Rakhovsky (VMP LTD, Moscow, Russia)**

Magnetostrictive actuators for positioning with subnanometer resolution ( $10^{-2}$  nm) in ranges up to 1 m have been developed and used. These actuators with 10 nm step can also be used as force actuators to deliver efforts up to  $10^4$  N. Precise displacements are set by active elements made of giant magnetostrictive alloys.

The actuators have been designed for precise manipulators and object tables, nanotechnology devices, adaptive optics, for the manufacturing of VLSI, Fresnel optics, diffraction gratings, etc. Low-power excitation of active elements is performed due to a unique patented method allowing for a drift of less than  $10^{-3}$  nm/s without any temperature stabilization. The actuator consumes energy only during displacements.

It can be either operated manually without any external energy source, or by computer control. With manual control one can achieve steps of 3 nm, and with a reduction gear  $15 \cdot 10^{-3}$  nm. Under computer control these values are  $10^{-2}$  nm resp.  $4 \cdot 10^{-5}$  nm. The dimensions of these actuators are 50 x 31 x 27 mm and 120 x 190 x 38 mm.

The author will give a demonstration of the micropositioner under various conditions.

This seminar is free of charge and no registration is necessary.

Une journée Portes Ouvertes aura lieu le

**samedi 11 mai 1996 de 09.00 hrs à 18.00 hrs**

où de nombreux circuits de visite vous permettront de découvrir les expériences du Laboratoire, au travers d'installations de haute technologie telles que le tunnel du LEP. Vous pourrez également assister à des démonstrations de réalité virtuelle, le World-Wide Web vous ouvrira ses portes et la physique sera à votre portée dans la rue.

Les détails du programme vous seront communiqués dans un Bulletin hebdomadaire ultérieur.

Service des Visites / DSU  
[Open.Day@Macmail.CERN.CH](mailto:Open.Day@Macmail.CERN.CH)



## Journée Portes ouvertes / Formulaire «Assistants»

Open.Day@Macmail.cern.ch

Open Day / Helpers Appeal

La Direction a invité le Service des Visites à organiser une journée portes ouvertes. Elle aura lieu le **samedi 11 mai**. En plus du public habituel du samedi, nous attendons des milliers de visiteurs principalement en provenance des régions de Genève et du Pays de Gex.

*La collaboration de toutes celles et ceux qui ont envie de participer est la bienvenue!  
Veuillez indiquer vos préférences :*

- ☐ Réception / accueil
- ☐ Démonstration de réalité virtuelle
- ☐ Web Café (navigation sur WWW)
- ☐ Physiciens au Microcosm et/ou sites d'expériences, selon vos aptitudes
- ☐ Autre .....

### Horaires

09h00-12h00      12h00-15h00      15h00-18h00      09h00-13h30      13h30-18h00      Toute la journée

Un T-shirt et un ticket repas seront offerts à chacun des participants.

Nom ..... Division.....

*Prière de retourner ce formulaire au Service des Visites / DSU  
Merci!*

The Directorate has asked the Visits Service to organize an Open Day. It will take place on **Saturday 11 May** when we are expecting thousands of visitors, mostly from Geneva and the Pays de Gex areas, in addition to our standard Saturday public.

*Your voluntary collaboration is more than welcome!  
Please indicate how you would like to help :*

- ☐ Reception/information points
- ☐ Virtual Reality demonstration
- ☐ Web Café (navigation on WWW)
- ☐ Duty Physicist in Microcosm / experimental sites, according to your qualifications
- ☐ Other .....

### Timetable

09h00-12h00      12h00-15h00      15h00-18h00      09h00-13h30      13h30-18h00      All day

Each helper on duty on the Open Day will receive a T-shirt and a lunch ticket.

Name ..... Division.....

*Please return the completed form to the Visits Service / DSU  
Thank you!*

**Le Service des Visites du CERN propose :  
VISITES SPECIALES POUR LE PERSONNEL DU CERN**

Avez-vous déjà visité une des expériences LEP ou une autre installation du CERN? Peut-être n'en avez vous jamais eu l'occasion. C'est le moment d'en profiter!

Tout ce que vous avez à faire, c'est simplement de contacter le Service des Visites du CERN en téléphonant au 8484 afin de réserver votre place pour l'une des visites ci-dessous .

**The CERN Visits Service proposes :  
SPECIAL VISITS FOR CERN STAFF**

Have you ever visited a LEP experiment or any other CERN installation? Maybe you have never had the chance. So now is the time to do it!

All you have to do is call the CERN Visits Service on 8484 and book your place on one of the visits shown below.

| Date           | Installation   | Langue | Heure |
|----------------|----------------|--------|-------|
| Lundi 15 avril | Ensemble du PS | F      | 16.00 |
| Jeudi 18 avril | L3             | F      | 16.00 |
| Lundi 22 avril | ALEPH          | F      | 14.00 |
| Jeudi 25 avril | OPAL           | F      | 16.00 |
| Lundi 6 mai    | L3             | F      | 16.30 |

La visite, d'une heure, débutera par une courte introduction. Chaque groupe sera limité à un maximum de 12 personnes. Le rendez-vous est à la Réception, bâtiment 33.

Nous vous attendons avec impatience!

Service des Visites / DSU

The visit will last one hour and will start with a short introductory talk. The size of each group will be limited to a maximum of 12 people. The meeting point is at reception desk, building 33.

We look forward to hearing from you!

Visits Service / DSU

**AUX MEMBRES DU PERSONNEL TITULAIRES ET BOURSIERS**

La MISSION PERMANENTE DE LA FRANCE auprès de l'Office des Nations Unies à Genève nous demande d'informer les membres du personnel et assimilés de nationalité française, employés par le CERN, de la mise en place d'un régime complémentaire de couverture sociale destiné aux fonctionnaires internationaux qui souhaiteraient y souscrire.

Une information leur sera directement adressée au CERN par la Caisse nationale de Prévoyance.

Division du Personnel  
Tél. 4128