



SEMINARS SEMINAIRES

Monday 11 April

EF SEMINAR

at 11.00 hrs – EF Conference Room
bldg 13, 2-005

**The role of microelectronics, microprocessors
and computers in current and future experiments**

by Ph. GAVILLET / CERN-EF

Modern experiments at current and near-future accelerator facilities, are characterized by data rates and volumes almost an order of magnitude higher than the previous generation. This is due to the advent of huge detectors with large acceptance and very fine granularity. Consequently, the acquisition and treatment of the information from the raw detector signals up to the reconstruction and analysis of physics events now appears as a complex multi-faceted problem where a large variety of electronic devices and computer equipment are used and a diversity of techniques are involved. The presentation intends to show how current micro-electronics, microprocessors, dedicated processors, mini-computers and main frames are employed to deal with this task. The domains where direct benefit is taken from commercial products will be identified and discussed in the light of their dramatic evolution in performance and price. Conversely, the need for special developments, tailored to specific application, will also be presented. As a conclusion, the way that new products might lead to improvements in data handling will be discussed, along with the possibility that future developments might open new perspectives for the processing of experiments.

Mardi 12 Avril

PRESENTATION TECHNIQUE

de 10h00 à 12h00 et de 14h00 à 16h00

Bât.17, salle 1-007

Quartz & Silice (F), représentée par la Société Electrothermique de la Tour-de-Trême (CH), propose la présentation des produits suivants :

- 1) *Fibres optiques à saut d'indice pour des applications de transmission d'informations ou de puissance sur courtes distances :*
 - *qualité silice-silicone et*
 - *toute silice*

- 2) *Silice naturelle et synthétique pour des applications optiques :*

- *hublots*
- *fenêtres de transmission*

- 3) *Détecteurs de rayonnements nucléaires à scintillations utilisant des monocristaux de :*

- *iodure de sodium dopée au thallium*
- *iodure de césium dopée au thallium*
- *iodure de césium dopée au sodium*

- 4) *Monocristaux synthétiques utilisés en fluorescence-X, piézoélectricité, électro-optique et pyroélectricité et optique de transmission :*

- *types LiF, TIAP, ADP, CaF₂.*

Langues : Anglais, français

Renseignements : M. Diraison / FI / 4585

Tuesday 12 April

CERN COLLOQUIUM

at 16.30 hrs – Auditorium *

Searches for double beta decay and dark matter

by David O. CALDWELL / Univ. of California,
Santa Barbara

An introduction will be given to double beta decay, one type (two- neutrino) of which has been observed recently in the laboratory for the first time. The so far unobserved neutrinoless decay would require two items of new physics beyond the standard model, of which one is lepton number nonconservation. The other is likely to be neutrino mass, and the UCSB/LBL experiment sets a limit on the effective neutrino mass in this decay of about 1 eV from a half-life limit of about 10²⁴ years. This very sensitive experiment has also been used to search for the scattering from detector atoms of massive particles which could be responsible for 90% of the mass of the universe. The possible nature of this dark matter will be discussed and experimental limits on its properties given.

* Tea and coffee will be provided at 16.00 hrs.

Wednesday 13 April

HYPERCARD SEMINAR

10.00 / 12.00 hrs – Auditorium

Hypercard on Macintosh

by V. FRIGO / DD-ADP

- *Product presentation*
- *Live demo*

Information: F. Saldana / EP / 8-7158 /
Mac Support Group

Wednesday 13 April

THEORETICAL SEMINAR

at 14.00 hrs – Theory Conference Room

Schizons: an open window on new physics ?

by Christopher T. HILL / CERN and Fermilab

Schizons are pseudo-Goldstone bosons, similar to the axion, which, via CP-violating effects, can produce new macroscopic phenomena. We propose three experiments that are sensitive to these effects. Schizons can also lead to novel states of matter, like neutron supernuclei, and they can have dramatic cosmological implications, e.g., we can raise f_{axion} to 10^{16} GeV by resonant de-excitation into (harmless) schizons.

Friday 15 April

MEETINGS ON PARTICLE PHYSICS PHENOMENOLOGY

at 11.00 hrs – Theory Conference Room

Scaling violations in deep inelastic scattering QCD (II) – Neutrino data

CDHSW:

C. GEWENIGER / Heidelberg

New results on the QCD analysis (40 mn)

CHARM:

E. LONGO / Rome (20 mn)

Tuesday 19 April

SPECIAL LECTURE

at 16.30 hrs – Auditorium

Supercomputers: future perspectives

by Seymour CRAY /
Cray Research Inc.

Mercredi 20 Avril

SEMINAIRE LEP

à 14.30 hrs – Amphithéâtre LEP

Métrologie de positionnement des expériences LEP

par C. LASSEUR / CERN-LEP

Wednesday 20 April

SCIENCE AND SOCIETY

at 16.30 hrs – Auditorium

Polar ozone holes: certainties and uncertainties

by Patrick AIMEDIEU / CNRS,
Service d'Aéronomie

Wednesdays 20 , 27 April and 4 May

PS SEMINARS

at 11.00 hrs - PS Auditorium
bldg 6, 2-024

1) Wednesday 20 April

The SPS/LEP timing system

by G. BEETHAM

2) Wednesday 27 April

The PS timing system and the program-line-sequencer control of the power house

by J. LEWIS

3) Wednesday 4 May

New ideas and evolution of accelerator timings

by G. BARIBAUD

Timing and timing related aspects have always been hot issues for accelerators operations. The following three seminars on consecutive Wednesdays will expose the salient points of the principal accelerator timing systems at CERN and their possible evolution in the coming years.

Thursday 21 April

CERN COLLOQUIUM

at 16.30 hrs – Auditorium

Supernovae and neutron stars

by Joachim TRUMPER / Max-Planck-Institut
für Physik und Astrophysik
Institut für Extraterrestrische Physik,
Garching/München

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18, 20 & 22 April

11.00 to 12.00 hrs – Auditorium

Perturbative QCD and experiment

by G. ALTARELLI / CERN-TH

A concise update, in simple terms, of the state of the art in perturbative QCD will be given. The main emphasis will be on a critical discussion of the comparison of QCD with experiment. I will specially discuss issues of particular interest at present like measurements of α_s , observing the gluon, production of heavy flavours, W and Z cross-sections, open problems and perspective.