

# SEMINARS SEMINAIRES

---

## Monday 4 December

### EF SEMINAR

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

#### LEP 200 : superconducting cavities on the way

by Enrico CHIAVERI / CERN

*From 1989 onwards, a feasibility study was carried out at CERN for the application of superconducting accelerating cavities in LEP. Methods for producing 350 MHz cavities from Niobium sheet have been developed and have given excellent results for quality factors and accelerating fields. A 4-cell cavity of this type, entirely produced at CERN, has accumulated by now more than 8000 hours of operating time in the SPS, providing additional voltage for lepton acceleration. At the same time, pioneering developments on niobium sputter-coated cavities have been done at CERN. These cavities show comparable results with respect to accelerating field and even higher quality factors. This talk presents the status of the development and prototype construction work at CERN and of large scale manufacture work in industry. An outlook will be given on the possible LEP upgrading with superconducting cavities.*

## Monday 4 December

### PROTON SYNCHROTRON AND SYNCHRO-CYCLOTRON COMMITTEE

#### Open session

at 14.00 hrs – Council Chamber

1. *Status Report on Experiment PS 195 : Tests of CP violation with  $\bar{K}^0$  and  $K^0$  at LEAR (Athens - Basle - Boston - CERN - Coimbra - Delft - Fribourg - Ioannina - Liverpool - Ljubljana - Marseille CPPM - PSI - Saclay CEN DPhPE - Stockholm MSI - Thessaloniki - Zurich ETH; P. Pavlopoulos)*
2. *Status Report on Experiment PS 199 : Study of the spin structure of the  $p\bar{p} \rightarrow n\bar{n}$  channel at LEAR (Cagliari - Geneva - Saclay CEN DPhN - Saclay LNS - Trieste Univ./INFN - Turin Poly./INFN - Turin Univ./INFN; PSCC/89-34/M308; F. Bradamante).*
3. *Status Report on Experiment PS 201 : Study of  $\bar{p}$  and  $\bar{n}$  annihilations at LEAR with OBELIX (Bologna Univ./INFN - Brescia - Cagliari - CERN - Dubna JINR - Frascati Nat. Lab. INFN - Legnaro Nat. Lab. INFN - Orsay CSNSM - Padua Univ./INFN - Pavia Univ./INFN - Trieste Univ./INFN - Turin Univ./INFN - Turin Poly./INFN - Udine Univ./INFN; T. Bressani).*

4. *Status Report on Experiment PS 202 - JETSET : Physics at LEAR with an internal gas jet target and an advanced general purpose detector (CERN - Freiburg - Geneva - Genoa Univ./INFN - Illinois Univ. at Urbana Champaign - Iowa - Jülich IKP-KFA - Oslo - Uppsala; PSCC/89-33/M307; R. Eisenstein).*

#### Closed session

Tuesday 5 December  
at 09.00 hrs – 6th floor Conference Room

## Monday 4 December

### EP SEMINAR

at 16.30 hrs – Auditorium

#### Light quark meson spectroscopy

by M. BOUTEMEUR / CERN

*Summary of new experimental results presented at the 'Hadron 89' Conference.*

## Tuesday 5 December

### MEETING ON FASTBUS DEVELOPMENTS

at 09.00 hrs – TH Conference Room

1. *Multiprocessor event filtering at the Heidelberg/Darmstadt crystal ball  
by Ch. Ender / University of Heidelberg*
2. *FASTBUS developments at NIKHEF for DELPHI and L3  
by M. Groenstege and J. Weber / NIKHEF, Amsterdam*
3. *The read-out system for the FEMC of DELPHI  
by M. Pegoraro / University of Padua*
4. *A DSP based FASTBUS board for data acquisition or high level trigger control in the DELPHI electromagnetic calorimeter  
by R. Cirio / INFN, Torino*
5. *Various.*

## Mardi 5 décembre

### PRESENTATION TECHNIQUE

de 10.00 à 12.30 h & de 14.00 à 16.30 h  
(2 séances identiques)  
bât. 17, 1-007

*APRIL SA (F), représenté par Merlin-Gerin Suisse, propose un exposé (1 h) suivi de démonstration (1.30 h) sur ses nouveaux automates programmables 5000/7000 et leur nouveau concept d'architecture d'automatisme totalement décentralisé appelé Fil Vert. Présentation du logiciel ORPHEE, compatible PC, véritable atelier génie logiciel pour le développement d'applications d'automates programmables qui inclue la spécification du cahier des charges, l'analyse de l'application, la programmation en relais, Grafcet, etc., les tests et la recette.*

*Applications – Contrôle de procédé industriel : station de pompage, climatisation, gestion technique centralisée, etc.*

Langue : français

Renseignements : M. Diraison / FI / 4585

## Tuesday 5 December

### CERN PARTICLE PHYSICS SEMINAR

at 16.30 hrs – Auditorium\*

#### Three families. Results of the ALEPH Collaboration at the $Z^0$

by J. STEINBERGER / Scuola Normale, Pisa

*Recent ALEPH measurements on the  $Z^0$  peak will be presented, with emphasis on the determination of the absolute cross-section at the peak and the associated systematic errors.*

\* Tea & coffee will be served at 16.00 hrs.

## Wednesday 6 December

### PS SEMINAR

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

#### Experience with workstations for accelerator control at the CERN SPS

by Ian WILKIE / CERN-SPS

*The CERN Super Proton Synchrotron (SPS) control system is currently undergoing a major long term upgrade. This seminar reviews progress on the high level application software with particular reference to the operator interface. An important feature of the control system upgrade is the move from consoles with a number of fixed screens and limited multi-tasking ability to workstations with the potential to display a large number of windows and perform a number of independent tasks simultaneously. This workstation environment thus permits the operator to run tasks in one machine for which he previously had to monopolize two or even three old consoles. However, the environment also allows the operator to cover the screen with a multitude of windows, leading to complete confusion. Initial requests to present some form of 'global status' of the console proved to be naive, and several iterations were necessary before the operators were satisfied.*

## Wednesday 6 December

### THEORETICAL SEMINAR

at 14.00 hrs – TH Conference Room  
(Title to be announced later)  
by P. SODANO

## Wednesday 6 December

### DD SEMINAR

at 16.00 hrs – DD Auditorium  
bldg 31 3-005

#### Tools and mechanisms for different levels of parallelism for multiprocessors computers

by Jim BARTON / Silicon Graphics Mountain View

*The benefit of multiprocessing and parallel architecture in minisuper computers is becoming more and more visible both in number crunching applications and in heterogeneous task parallelism. Silicon Graphics' implementation of 'lightweight processes' mechanism linked to a 'Power Path' architecture using R3000 MIPS processors has dramatically increased the performance of scalar parallel computers, improving both coarse and fine grain parallelism. Tools to improve performance include :*

- Power Fortran Analyser for automatic data dependencies analysis
- dbx multiprocessors and multiprocess Unix debugger (with a graphical interface)
- profiling tools running both over single and multiple threads of execution

*The presentation will include a demonstration of both tools and examples using a 4 processor IRIS system.*

## Thursday 7 December

### ISOLDE SEMINAR

at 16.00 hrs – Theory Conference Room

#### Exploring the frontier of exotic nuclei : recent measurements using the TOFI spectrometer

by David J. VIEIRA / Los Alamos National Laboratory, USA

*This talk will highlight the mass measurements being carried out on the Time-Of-Flight Isochronous (TOFI) recoil spectrometer at LAMPF (Los Alamos Meson Physics Facility). Here the high-intensity 800 MeV proton beam is used to produce a plethora of exotic nuclei via fragmentation, fission, and spallation reactions. A small fraction of these recoils are captured by a secondary beam line and introduced into TOFI. The initial use of this spectrometer as a recoil tagging device to facilitate the decay studies of light exotic nuclei will also be presented.*

## Thursday 7 December

### CERN PARTICLE PHYSICS SEMINAR

at 16.30 hrs – Auditorium\*

#### Three generations, past, present, and future : a theorist view

by D. NANOPOULOS / College Station A&M University, Texas

\* Tea & coffee will be served at 16.00 hrs.

## Friday 8 December

### FORTY-SIXTH PLENARY ECFA MEETING

at 09.00 hrs – Council Chamber  
Afternoon – Auditorium

1. Approval of the Draft Minutes of the Forty-fifth Plenary ECFA Meeting

2. *Approval of the Draft Agenda*
3. *Chairman's Report*
4. *LEP Operations' Report*  
(E. Picasso)
5. *Preliminary Report on ECFA Survey*  
(R. Turnbull)
6. *CERN Future Programme*  
(C. Rubbia)
7. *LHC Machine Design*  
(G. Brianti)
8. *Report on the Barcelona Study Week*  
(C. Fabjan)
9. *Discussion on LHC*  
– *ECFA Action on Detector R&D*
10. *Any Other Business.*

## Lundi 11 décembre

### SEMINAIRE EF EN ELECTRONIQUE

à 11.00 h – Salle de Conférence EF  
bât. 13, 2-005

#### ASICs pour les expériences au CERN

par Pierre JARRON / CERN-EF

*L'ASIC, 'Application specific integrated circuit' fait partie depuis peu de temps de l'état de l'art de la technique des circuits électroniques analogiques et numériques. Qu'est ce qu'un ASIC, comment faire un ASIC, comment acquérir le savoir faire pour le concevoir, quels sont les outils de CAO, quels sont les différents types d'ASIC? C'est à toutes ces questions techniques que ce séminaire tentera de répondre. Une approche nouvelle s'impose pour la conception d'ASIC. Dans cette approche le concepteur de circuits électroniques doit faire un pas en avant dans le niveau d'abstraction et d'organisation de son travail, dans la façon de dialoguer avec les utilisateurs pour établir les spécifications, et dans les contacts avec l'industrie. Pour les expériences de physique de particules au CERN, les ASICs deviennent actuellement un moyen de haute technologie très puissant permettant de réaliser des systèmes électroniques de lecture incomparables tant en densité, complexité, performance, fiabilité et coût.*

## Mardi 12 décembre

### PRESENTATION TECHNIQUE

de 10.00 à 12.00 & de 14.00 à 16.00 heures  
bât. 73, 2-027

*Démonstration de Alpha Technologie (F), représentant Coopertools (D)*

Langue : français

Renseignements : M. Diraison / FI / 4585

## Tuesday 12 December

### CERN PARTICLE PHYSICS SEMINAR

at 16.30 hrs – Auditorium

#### Measurement of W and Z parameters in UA2

by K. EINSWEILER / CERN

## Thursday 14 December

### ISOLDE SEMINAR

at 10.00 hrs – TH Conference Room

#### Tilted foil polarization of separated reaction products and radioactive beams

by Michael HASS / NSRL, University of Rochester

## Thursday 14 December

### ISOLDE COMMITTEE

#### Open session

Thursday 14 December

at 13.00 hrs – PS Auditorium, bldg 6, 2-024

1. *Introductory remarks (B. Jonson)*
2. *ISOLDE operation in 1989/1990 (H. Haas)*
3. *The plans for ISOLDE at the PS Booster (R. Billinge)*
4. *IP-73 Proposal : Pulsed collinear laser spectroscopy; G. Huber (Orsay - Mainz - Montreal - Lyon - GSI)*
5. *IP-68 Proposal : Nuclear polarization and magnetic resonance of implanted atoms with radiation detected optical pumping in solids; S. Matsuki (RCNP - Osaka - Kyoto - Tohoku - Riken - INS - Tokyo - Orsay - CERN)*
6. *IP-71 Proposal : On-line nuclear orientation of light nuclei; a first case study : I.B. Anisotropy from <sup>37</sup>Ar. L. Vanneste (NICOLE Collaboration)*
7. *IP-70 Proposal : neutron-proton interaction across N = 20, the case of <sup>33</sup>Si; G. Walter (Strasbourg - Lyon - CERN - Madrid)*
8. *IP-74 Proposal : Study of <sup>37</sup>Ca β-decay with detection of delayed proton γ coincidences; A. Garcia (Seattle - Berkeley)*
9. *IP-75 Proposal : Shape coexistence phenomena following electronic capture processes; C. Miehé (Strasbourg)*
10. *IP-69 Proposal : Internal channeling studies of implanted oversized atoms using position sensitive particle detection; G. Langouche (Berlin - CERN - Leuven - Gothenburg)*
11. *IP-67 Proposal : Identification of band gap states in semiconductors by deep level transient spectroscopy of radioactive impurities; J. Petersen (Aarhus)*

12. *IP-66 Proposal : A search for axions by nuclear resonance scattering; G. Weyer (CERN - Aarhus)*
13. *IP-64 Proposal : Study of monopole transitions in  $^{80}\text{Kr}$  and  $^{78}\text{Se}$ ; P. Sona (Florence - Aarhus - CERN)*
14. *IP-65 Proposal : Search for low-lying  $O^+$  states in the even-even Po isotopes; M. Huyse (IKS/ K.U. Leuven)*

15. *IP-72 Proposal : Nuclear orientation studies near doubly magic  $^{132}\text{Sn}$ ; N. Stone (NICOLE Collaboration)*
16. *Any other business*

#### Closed session

Friday 15 December  
at 08.30 hrs – DG Conference Room, bldg 60,  
6th floor

## TRAINING AND EDUCATION ENSEIGNEMENT

---

### ENSEIGNEMENT GENERAL Tél. 2844-5811

#### Jeudi 7 décembre

de 13.00 h à 13.30 h – Amphithéâtre

**Science pour tous**

par R. CARRERAS

*N.B. La séance n'aura pas lieu le 14 décembre.  
Cours suivant le 21 décembre!*

#### Mardi 5 décembre

##### LES SCIENCES AUJOURD'HUI

**à 20.00 h précises – Amphithéâtre**  
(jusqu'à environ 22.00 h)

par R. CARRERAS

*Rafel Carreras, responsable du programme d'Enseignement général au CERN, commentera et expliquera un choix d'articles parus récemment dans des revues scientifiques, et qui couvrent l'ensemble des sciences physiques et biologiques ainsi que certains aspects des relations science-société. Une attention particulière est portée au langage et aux notions utilisés afin que les explications et les commentaires soient accessibles aux personnes n'ayant pas de formation scientifique.*

Entrée libre

(Please note that the lecture will be given in FRENCH)

Service des Relations Publiques  
Tél. 2722

### ACADEMIC TRAINING Tél. 2844-3364

#### 4, 5, 6 & 7 December

11.00 to 12.00 hrs – Auditorium

**Introduction to the standard model**

by C. JARLSKOG / University of Stockholm &  
CERN-TH

#### 11 & 12 December

11.00 to 12.00 hrs – Auditorium

**Accelerators for the 21st Century**

by E.J.N. WILSON / CERN-PS

*Modern synchrotrons and storage rings are based upon the electrical technology of the 1900s boosted by the microwave radar techniques of World War II. This method of acceleration now seems to be approaching its practical limit. It is high time that we seek a new physical acceleration mechanism to provide the higher energies and luminosities needed to continue particle physics beyond the machines now on the stocks. Twenty years is a short time in which to invent, develop and construct such a device. Without it, high energy physics may well come to an end. Particle physicists and astrophysicists are invited to join accelerator specialists in the hunt for this new principle. As a first step, these lectures will analyse the present limitations of colliders and explore some of the directions in which one might look to find a new principle.*