



SEMINARS SEMINAIRES

Monday 10 November

EF SEMINAR

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

**Report on the Nuclear Science Symposium 1986,
Washington**

by J.P. DUFEY / CERN

The 1986 Washington Nuclear Science Symposium will be reviewed with emphasis on data acquisition hardware and software.

Monday 10 November

EP SEMINAR

at 16.30 hrs — Auditorium

Physics aspects of hadron calorimetry

by Richard WIGMANS / CERN and NIKHEF

Future experiments in particle physics will increasingly rely upon the quality of data taken with hadron calorimeters. Recently, much progress has been made in understanding the factors that determine and limit the capabilities of these detectors. The achievable energy resolution and the signal linearity crucially depend on the relative calorimeter response to the electromagnetic and the purely hadronic shower components, the e/h signal ratio. The factors that determine the value of this ratio will be examined in some detail. The choice of the readout material and the sampling fraction turn out to be extremely important in this respect. Signal equalization, or compensation ($e/h = 1$) does not necessarily require the use of uranium absorber, but can be achieved with lead, and probably even with iron as well.

Tuesday 11 November

PROTON SYNCHROTRON AND
SYNCHRO-CYCLOTRON COMMITTEE

Please note : No open session

Closed session

Tuesday 11 November at 09.00 hrs in the 6th floor
Conference Room.

Mardi 11 novembre

PRESENTATION TECHNIQUE

de 10.30 à 12.00 h — bus parking PTT, bât. 63

STAHL (D), représenté par FRIBOS AG (CH), propose en exposition de l'appareillage électrotechnique antidéflagrant : équipements Ex (boîtes de dérivation, raccordement, prises de courants), organes de commandes 8003 et 8030, sécurité intrinsèque avec la nouvelle barrière de sécurité modèle 9001 munie d'un fusible à clé, multiplexeur en intrinsèque selon technique ICS MUX.

Langues : allemand, français

Renseignements : M. Diraison / FI / 4585

Tuesday 11 November

CERN PARTICLE PHYSICS SEMINAR

at 16.30 hrs — Auditorium*

**Recent results on the electroweak interactions of
the tau lepton and the quarks from the MAC
experiment at SLAC**

by Manuel C. DELFINO / University of
Wisconsin

Two recent results from the MAC experiment at SLAC are presented. First, a measurement of the angular distribution of hadron jets produced in electron-positron annihilations is performed, using the rapidity weighted jet-charge to indicate the charge of the initial quark or antiquark. A charge asymmetry is observed and a value for the electroweak axial-vector coupling constant is extracted. The second result is based on measurements of the angular distributions and energy spectra of decay products of the tau lepton, specifically electrons, muons, charged pions and rho mesons. These distributions are used to probe the weak decay current of the tau through the Michel parameter and to measure the polarization of the taus. All results agree well with the Glashow-Salam-Weinberg model of electroweak interactions.

* Tea and coffee will be provided at 16.00 hrs.

Mercredi 12 novembre

PRESENTATION TECHNIQUE

de 10.00 à 12.00 h et de 14.00 à 16.00 h
bât. 17, 1-007

CCP SA, Consendai Computer Products SA (CH), propose une démonstration des imprimantes Mannesmann Tally (D/A) : MT 85 pour A4 debout ou 80 colonnes, MT 86 pour A4 couché ou 136 colonnes, à 186 cps en

mode normal et 45 cps en mode correspondance, caractère ASC 11 et IBM/PC – MT 90 à jet d'encre, silencieuse, 200 cps en mode normal et 110 cps en mode NLQ, papier standard, possibilité graphique à 240 dpi, sub et superscript, plusieurs densités de caractères sont possibles – MT 290, professionnelle, 200 cps et 5 cps, jeux de caractères standards en mémoire, + possibilités types APL, Télétex OCR B, Modern, Gothic, Courier, Italic II et codes-barres – MT 30 à 24 aiguilles, 300, 150 ou 75 cps, résolution graphique 240/360 pts/inch, possibilité couleur – MT 440/460/490 haute vitesse 400 cps et couleur – MT 660/690, 600 et 900 lignes/min., labels et grands caractères – MT 910 à laser 10 pages/min. en A4, interface spéciale pour sorties de 4 ordinateurs.

Langues : allemand, anglais, français
Renseignements : M. Diraison / FI / 4585

Wednesday 12 November

PS SEMINAR

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

**What signs of QCD in spectroscopy?
How can LEAR help?**

by F.E. CLOSE / Rutherford Appleton
Laboratory, UK

There is general agreement that QCD is the theory of interacting quarks and gluons, and that in addition to conventional mesons built from quarks, there should be glueballs and hybrid states (states containing both quarks and resonating gluons). This has been known for some years, yet there is still no good evidence for them. LEAR plans experiments that may be able to shed information on this. The theoretical predictions on production, spectroscopy and decays of gluonic hadrons will be surveyed. There are many different models but there are some common features on which they agree. Some folklore is demonstrably wrong, but still widely believed in. The importance of improving our understanding of hadrons built from light quarks will be emphasised, as without this we will probably remain uncertain about the claims to have sighted new gluonic states. The talk will be of a broad perspective and review rather than detailed theory. An introductory orientation for non-specialists will be included.

Wednesday 12 November

THEORETICAL SEMINAR

at 14.00 hrs – TH Conference room

Quantum gravity with no strings attached

by C.J. ISHAM / Imperial College, London

After many decades of effort, the study of quantum gravity has reached a critical phase. All attempts to quantize the gravitational field from a conventional particle physics perspective have failed and have been largely overtaken by the superstring programme. However, many workers in quantum gravity have sought the unification of quantum theory and general relativity in a theoretical structure that would include a fundamental reassessment of the basic concepts of space and time; something that was not achieved by the old, weak-field per-

*turbative, approaches and which has not yet been incorporated into the string programme. The seminar will contain a general review of the current status of those branches of quantum gravity that do **not** invoke string ideas, and with particular emphasis on the approaches that invoke a dynamical role for spacetime itself in addition to that of the gravitational field which it carries. The discussion will be in fairly general terms and will not be too technical.*

Wednesday 12 November

LEP SEMINAR

at 14.30 hrs – LEP Auditorium
bldg 30, 7th floor

RF cavity tuning control for the LEP main ring

by P. BROWN / CERN-LEP

Each of the 128 copper coupled-cavity units of the LEP RF systems is equipped with a mechanically driven tuning system. The closed loop operation of this system both to optimize the RF power balance along the accelerating cavity and to compensate for cavity detuning during RF power cycling will be described. A brief presentation of the hardware developed, its interface to the RF control system and some operational results from the 16 cavity test string will be presented.

Friday 14 November

MEETINGS ON

PARTICLE PHYSICS PHENOMENOLOGY

at 11.00 hrs – TH Conference Room

QCD jets – A perturbative approach to low transverse momentum physics

by G. PANCHERI / INFN, Frascati

The contribution of QCD jets to the rise with energy of the inelastic cross-section is discussed and found to be large. It is seen that the inclusive jet yield is the fastest growing component of the total cross-section. The dependence of this yield upon rapidity cuts, choice of parton densities, value of the QCD scale Q^2 and the transverse momentum cut-off p_{cut} are examined. At higher energies, multiple parton scattering processes are seen to be non-negligible. Extrapolation of the low transverse momentum jet yield to the tevatron and beyond is also presented.

Monday 17 November

EF SEMINAR

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

The ALEPH Data Acquisition System

by C. ARNAULT / CERN

A software system supporting data acquisition activities on VAX computers is being developed for use on the ALEPH experiment. A first version of this system has been completed and used in a testbeam (July to September 1986) to test elements of the ALEPH Electromagnetic Calorimeter. The aim of the design is to provide an 'open' system which can be tailored in a flexible way to the many different data-taking configurations we

expect to run with on the experiment. The presentation will include an overview of this system with the first results of the calorimeter tests. In particular some emphasis will be placed on the new operator interface (UPI) built around the VAX VMS screen management library and which we used for the different elements needed for data acquisition like CAMAC producer, monitoring tasks, tape manager and run controller.

Monday 17 and Tuesday 18 November

Monday 17 November

DAISY SEMINAR

at 14.00 hrs – LEP Auditorium
bldg 30, 7th floor

DAISY workstation for electronic design support

by DAISY-Systems Corporation

Tuesday 18 November

DEMONSTRATIONS

at 09.00 hrs : Logic oriented session
at 10.30 hrs : Analog oriented session
at 14.30 hrs : Logic oriented session
Conference Room building 30, 4-035

To register for demonstration please telephone 2624.

Six DAISY Workstations have been in use at CERN for two years. In this seminar, the latest developments will be presented with special emphasis on the new applications supported on the IBM-PC-AT :

- *the DNIX / UNIX multiwindow / multitask operating system;*
- *the new ICONS and pop-up based drawing editor;*
- *the logic simulator / timing verifier with the new ICON and pop-up based user interface. PMX hardware extension allows the simulation of complex VLSI components (microprocessors, etc.);*
- *design and simulation support for PAL / PLD based circuits;*
- *analog circuits design and simulation with DSPICE and virtual lab;*
- *PCB layout with the Boardmaster software;*
- *ASIC design and layout support;*
- *networking based on Ethernet.*

Monday 17 November

EP SEMINAR

at 16.30 hrs – Auditorium

Charm hadroproduction at EHS

by M. IORI / CERN

Production and decay properties of D^0 , D^+ and in particular Λ_c as observed in 360 GeV/c π^-p and 400 GeV/c proton-proton interactions will be presented. Comparison to other hadroproduction experiments and to QCD predictions will be given.

Tuesday 18 November

PRESENTATION

at 10.00 and 14.00 hrs – DD Auditorium
bldg 31, 3-005

Office automation

by B. ROBERTS and A. RICHARD / AES
(Suisse) SA

Tuesday 18 November

CERN PARTICLE PHYSICS SEMINAR

at 16.30 hrs – Auditorium

Have we found the lightest scalar glueball?

by M. G. ALBROW / Rutherford Appleton
Laboratory

Wednesday 19 November

EXPERT SYSTEMS SEMINAR

at 11.00 hrs – DD Auditorium
bldg 31, 3-005

Applications of artificial intelligence to network diagnostic and gas analysis in mass spectrometry

by Claude LAI / GIA, Marseille
(in French)

Mercredi 19 novembre

REUNION OUVERTE DU LEP

à 14.30 h – Amphithéâtre du LEP
bât. 30, 7e étage

1. Annonces

2. Vidéo : Avancement des travaux de génie civil

3. Aperçus de la physique de la machine LEP

par J.-P. KOUTCHOUK / CERN-LEP

Thursday 20 November

CERN COLLOQUIUM

at 16.30 hrs – Auditorium

The atomic world of scanning tunnelling microscopy

by H. ROHRER, 1986 Nobel Prize, Physics /
IBM Research Division, Zurich Research
Laboratory

Vendredi 21 novembre

SERRE PILOTE CERN

à 14.30 h – Amphithéâtre

Présentation du rapport final de l'expérience du chauffage avec le rejet thermique du SPS (1983-1985)

Collaboration CERN - EPFL, Lausanne - Station
fédérale de Recherches agronomiques - Centre
horticole de Lullier