

SEMINARS SEMINAIRES

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 $\pi^- p$ 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

AES is an international company specializing in 'office automation' systems, ranging from stand-alone integrated workstations to sophisticated shared and distributed systems. The AES products are software-rich, network oriented and compatible with industry communication standards. As a result of the experience gained from installations within several CERN secretariats, this AES presentation will focus on the administrative needs of the secretariats and will present the new AES 7370 XP CPU and the AES L5 desk top laser printer which will offer new solutions for :

- typing and printing of complex reports including multi-level scientific formulae;
- records management applications within the divisions;
- fast spelling verification in English, French and German;
- creation of charts and statistical tables;
- financial applications such as spreadsheets for budgeting purposes;
- communications to the central computers for access to applications and data on the hosts.

There will be two presentations at 10.00 and 14.00 hrs, each lasting two hours. These will primarily be of interest to secretarial staff and administrative managers.

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

In QCD the self-interaction of gluons leads one to expect additional hadronic states with primary composition gg, ggg. We carried out a search at the ISR with the Axial

Field Spectrometer using the exclusive reactions $pp \rightarrow pp\pi^+\pi^-$, ppK^+K^- with the meson pair central in rapidity ('double pomeron exchange'). The $\pi^+\pi^-$ mass spectrum shows striking structure around 1 GeV, which we attributed to $S^(980)$. A recent extensive coupled channel ($\pi\pi$ and KK) analysis of our data by Au, Morgan and Pennington unambiguously shows two narrow resonances here: $S_1(991)$ and $S_2(988)$. The S_1 has $\Gamma = 40$ MeV, similar coupling to $\pi\pi$ and $K\bar{K}$ and is a plausible gluball candidate, while S_2 behaves like a $K\bar{K}$ bound state.*

* Tea and coffee will be provided at 16.00 hrs.

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

Two applications of artificial intelligence (written in PROLOG) for a gas control system for the ALEPH experiment are presented. The first program helps to diagnose failures in a tree-like microprocessor network. This program runs on a VAX and checks on-line the hardware and protocol when a problem is suspected. The second program is an on-line program driving a mass spectrometer using one of the network microprocessors. The spectrum acquisition and instrument adjustment are performed in real time, then an attempt at automatic analysis is performed. Further work includes a representation of the machine state (valves, gauges) and the manipulation of these real objects using graphic symbols on the screen.

Language : French

Wednesday 19 November

THEORETICAL SEMINAR

at 14.00 hrs – TH Conference Room

On the physical origin of modular invariance

by B. SCHROER / CERN

Recently Cardy used the partition function on the torus in order to determine the minimal family of local fields in $d = 2$ conformally invariant theories. I show that there is a dimensional 'fine tuning' which determines these families directly in Minkowski space. What is relevant here is the representation theory of the universal covering group of the real Möbius group. Since this covering group has no complex extension, the information I uncover by these methods is easily overlooked (and has been overlooked) in the Euclidean extension of Q.F.T. I will keep these rather subtle discussions (hopefully) simple by using the Ising field theory as an illustrative example.

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

Après un rappel des principes du LEP, l'accent sera mis sur les dernières contributions du groupe Théorie : l'optique et sa stabilité, les effets collectifs, etc. La présentation sera qualitative et non exhaustive!

Wednesday 19 November

DD SEMINAR

at 16.00 hrs – DD Auditorium
bldg 31, 3-005

Standard Generalized Markup Language

by A. BERGLUND

SGML – Standard Generalized Markup Language – ISO 8879 – is a language for representing documents in a descriptive markup form. One of the fundamental design goals of SGML has been to make the language independent of the text formatter used. One can thus expect, and is already starting to see, support for SGML from different vendors and running on a variety of computers. Some of these implementations use already existing text formatters. It is obvious that SGML can become a very useful interchange format between different systems and different installations. SGML has caused a lot of interest in both the publishing industry and the computer industry. Two user groups have been created to stimulate and share experience with SGML : the SGML User's Group and EPMarkup. It is of great interest to see that North-Holland is actively studying SGML and it may become possible for CERN authors to submit papers for publication in SGML form. Large organisations that have adopted SGML include the Office of Official Publications of the EEC and the US Department of Defense. The seminar will discuss the SGML standard in some detail as well as the initial implementation on the central IBM of a basic SGML application.

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

I present an overview of the present status and future prospects of the scanning tunnelling microscope and its variations. The classical applications deal with structural, electronic and chemical imaging of semiconductor and metal surfaces under operating conditions ranging from ultra-high vacuum to electrolyte

environment. Recent developments include interatomic forces and local elastic properties as well as the use of single atom tips as electron and ion point sources.

* Tea and coffee will be provided at 16.00 hrs.

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

*Systèmes de chauffage, pompes à chaleur, étude
économique, climat intérieur, bilans énergétiques,
méthodes de calcul des consommations auxiliaires,
résultats agronomiques.*

Monday 24 November

EF SEMINAR

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

**Fixed target physics with the Omega
spectrometer**

by W. BEUSCH / CERN

*Since the upgrade of the West Area (finished in 1983)
8 different experiments have been performed with the
Omega. Some highlights of the experimental techniques
used and of the physics of these experiments will be
presented.*

Monday 24 November

EP SEMINAR

at 16.30 hrs – Auditorium

**The electron neutrino studied in
inner-bremsstrahlung experiments : progress and
prospects**

by P.G. HANSEN / CERN and University of
Aarhus

*Internal bremsstrahlung in electron-capture beta decay
and related non-radiative processes offer the best
experimental possibility for setting an upper limit to the
mass of the electron neutrino. Provided that suitable
(‘resonant’) cases are discovered there is even, as pointed
out by De Rújula, a theoretical possibility that this
method might surpass the tritium experiments, the
canonical method for determining the mass of the
electron antineutrino. The seminar will summarize the
theoretical background, experimental checks on
bremsstrahlung theory, the status of the search for
resonant cases, and the possibility of developing new
high-resolution methods with greatly increased
sensitivity to $m(\nu_e)$.*

Tuesday 25 November

CAS ACCELERATOR SEMINAR

at 14.30 hrs – Auditorium

*The second lecture in the John Adams' Memorial
Lecture series*

**Accelerators and superconductivity :
a marriage of convenience**

by Martin WILSON / Special Projects Manager
at Oxford Instruments Ltd.

Wednesday 26 November

PS SEMINAR

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

**Advanced technology arising from particle
physics**

by O. BARBALAT

Thursday 27 November

CERN PARTICLE PHYSICS SEMINAR

at 16.30 hrs – Auditorium

**New results on nucleon structure function and
tests of QCD from the BCDMS experiment**

by R. VOSS / University of Munich

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Jeudi 20 novembre

de 13.00 h à 13.30 h – Amphithéâtre

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20 and 21 November

11.00 to 12.00 hrs – Auditorium

Cosmic rays open the field of particle physics

by M. CONVERSI / University of Rome