

SEMINARS

SEMINAIRES

Monday 21 March*

SL SEMINAR

at 11.00 hrs – SL Auditorium
Prévessin, bldg 864, 1st floor

Tutorial on Object Oriented Programming

by P. KUNZ / Stanford Linear Accelerator Center

Invented over 20 years ago, matured in the 1980s, Object Oriented Programming (OOP) appears to be the key software technology of the 1990s. In a wide range of fields from graphics to numeric simulations, OOP has proven the superiority of its technology. Programming with OOP technology is not difficult but most programmers find a high threshold in learning the concepts. In his tutorial, P. Kunz will discuss the basic concepts of OOP in simple terms and examples targeted to an audience experienced with traditional languages such as FORTRAN.

* Please note unusual day

Monday 21 March

PPE SEMINAR

at 16.30 hrs – Auditorium

B** tag : orbitally excited heavy-light mesons

by Chris QUIGG / Fermilab

Orbitally excited heavy-light mesons are potentially important as tools for tagging the flavors and momenta of ground-state pseudoscalars detected through weak decays. Efficient flavor-tagging would greatly enhance the prospects for the study of CP violation in hadron colliders or in a high-luminosity LEP. Heavy-quark symmetry provides estimates of masses and widths of p-wave B_c , D_c , and D_s mesons. I will compare these predictions with what is known about the charmed mesons and discuss their implications for the B and B_c families.

Tuesday 22 March

DETECTOR R & D COMMITTEE

at 09.00 hrs – Council Chamber

Open session

1. RD-22 Status Report : Crystal extraction at the SPS (ISA Aarhus–CERN–ESRF Grenoble–Frascati–Lecce–Pisa–La Sapienza Roma–Torino–Trieste–MPI für Metallforschung Stuttgart; DRDC 94-11; L. Lanceri).
2. RD-32 Status Report : Development of a Time Projection Chamber with high two track resolution capability for collider experiments (LBL–INP Cracow–GSI Darmstadt–IKF Frankfurt–CERN–MPI S. Wenig).
3. RD-33 Status Report : Study of the TGT concept for liquid argon calorimetry (RWTH Aachen–CERN–JINR Dubna–Heidelberg–Slovak Academy of Sciences–MPI Munich–IHEP Protvino; DRDC 94-8; H. Oberlack).
4. RD-34 Status Report : Developments for a scintillator tile sampling hadron calorimeter with "longitudinal" tile configuration (IFAE Barcelona–IAP Bucharest–LPC Clermont-Ferrand–CERN–EPI Armenia–LIP & Univ. Lisbon–Prague–COPPE/EE/UFRJ Rio de Janeiro–IHEP Protvino; DRDC 94-12; M. Cavalli-Sforza).

5. Proposal : Object oriented approach to software development for LHC experiments (Birmingham–CERN–Edinburgh–KEK Japan–INP Krakow–LAL Orsay–NIKHEF–RAL–DAPNIA–SEI Saclay–SEFT Helsinki–SSC Lab. Dallas–ICU Tokyo–Utrecht; DRDC 94-9/P55; K. Bos).

Closed session

following the Open Session continuing on
Wednesday 23 March at 09.00 hrs, 6th floor Conference Room

Tuesday 22 March

PRESENTATION

at 10.00 hrs – CN Auditorium
bldg 31/3-005

POWERENGINE The first VME Board Computer based on IBM PowerPC 601 Microprocessor

by CETIA

The presentation will at first give an overview of the agreement between CETIA and IBM, in particular about the PowerPC for VME and real-time-system applications. Then the speaker will present POWERENGINE, the VME board computer based on the PowerPC-601 RISC processor (50 MHz or 60 MHz). The board has a modular double bank DRAM memory (8-256 MBytes, implemented with plug-in memory modules), SCSI2 and Ethernet interfaces, three serial ports, a parallel (Centronics) port, a revision C interface to VMEbus, and a VSB interface. The board supports UNI/XT (based on IBM AIX technology) and UNI/RT5 (based on LynxOS) operating-system software, as well as several other real-time executives. A demonstration will conclude the presentation (please note that the demonstration will be in the morning, and not in the afternoon, as announced in the mailings).

Tuesday 22 March

CERN COLLOQUIUM

at 16.30 hrs – Auditorium*

Functional mapping of the human brain with positron tomography

by R.S.J. FRACKOWIAK / MRC Clinical Sciences

Centre, Cyclotron Unit, Hammersmith Hospital, London

Synaptic activity in the human brain is coupled to the local delivery of glucose and also to blood flow. The distribution of relative blood flow can be mapped in the human brain using the freely diffusible molecule water as a tracer. This can be labelled with the short living positron emitting isotope oxygen-15 with a half life of 2.1 minutes. Measurements can be made up to 12 times within the limits of 5 mSv effective dose equivalent to whole body radiation in normal subjects. Modern methods of detection using septa-less positron cameras based on BGO crystal technology allow for the collection of data which has sufficient power to significantly demonstrate changes of blood flow of the order of 3% to 5%. The distribution of changed blood flow between a control and an experimental brain condition allows mapping of brain functions. Various approaches to mapping have been undertaken including the subtraction approach, which is a categorical comparison of relative distributions and blood flow, and other more sophisticated correlational and data-led techniques. The Colloquium will describe the principles of functional brain mapping in man and liberally illustrate these with examples from the work at the MRC Cyclotron Unit in London.

* Tea & coffee will be served at 16.00 hrs.

Mercredi 23 mars

PRESENTATION

à 10.00 h – bât 104/R-B09

Produits de la firme SQC AG (Support & Quality Concepts), Zürich

par E. SCHMID / Directeur de SQC AG

- introduction
- systèmes de test pour cartes
- génération des pattern digitaux
- adaptation / contact pour test
- produits pour échange de data (CAD import)

Wednesday 23 March

THEORETICAL SEMINAR

at 14.00 hrs – TH Conference Room

Non-singular cosmologies and black holes in 2 and 4 dimensions

by R. BRANDENBURGER / Brown University, Providence, USA

We construct a higher derivative theory of gravity in which all cosmological (i.e., homogeneous and isotropic) solutions are non-singular, and show evidence that the non-singularity property also extends to anisotropic and black-hole type solutions. In two dimensions, our construction is closely related to dilaton gravity models. We can find potentials for the dilaton for which all solutions are non-singular.

Wednesday 23 March

COMPUTING SEMINAR

at 16.00 hrs – CN Auditorium

bldg 31/3-005

An experiment in object-oriented design of a scientific visualization tool

by Gregory KOZLOVSKY / CERN-CN

Displaying graphs of functions of one variable together with the associated information is the most basic problem of scientific visualization. We identify the main subtasks of this problem (treating details of graph representation, scaling, labeling, geometry management, and graphical user interface), and propose program structure for a general-purpose one-dimensional function viewer. A prototype C++ implementation of such a viewer, *g1tool*, is presented, and the lessons learned during this experiment are discussed. One of the goals of the talk is to give concepts of the object-oriented programming specific meaning in an application area which is familiar to many CERN programmers. This work was done when the speaker was employed by the City College of New York.

Thursday 24 March

THEORETICAL SEMINAR

at 14.00 hrs – TH Conference Room

ϵ'/ϵ : a theoretical reappraisal

by Guido MARTINELLI / Università di Roma "La Sapienza"

We present an upgraded theoretical prediction of the direct CP violation parameter ϵ'/ϵ using the next-to-leading Effective Hamiltonian and matrix elements from lattice QCD. With respect to our previous analysis, the experimental parameters have been updated to their latest determination.

We also give an extended discussion of the theoretical uncertainties. The CKM mixing angles are constrained by the experimental value of ϵ and the determination of f_B from lattice QCD. The impact of these constraints on the unitarity triangle and ϵ'/ϵ is shown. A comparative discussion of other theoretical predictions for ϵ'/ϵ is also included.

Thursday 24 March

CERN PARTICLE PHYSICS SEMINAR

at 16.30 hrs – Auditorium*

Electroweak results from CDF

by Young-Kee KIM / LBL-CDF collaboration

CDF has accumulated 21.4 pb^{-1} of data from August 1992 to May 1993. This data provides improved measurements of various quantities of interest in Electroweak physics. These include the W mass, the ratio of the W and Z cross-sections, the W asymmetry, and three-vector-boson couplings.

* Tea & coffee will be served at 16.00 hrs.

Friday 25 March

MEETING ON PARTICLE PHYSICS PHENOMENOLOGY

at 14.00 hrs – TH Conference Room

Chasing the $\Delta I = 1/2$ rule

by Matthias JAMIN / CERN

A calculation of next-to-leading order QCD corrections to inclusive $\Delta S = 1, 2$ transitions will be presented. To this end, two-point functions of four-quark operators are calculated up to order α_s . The $\Delta I = 1/2$ rule manifests itself through large perturbative corrections in this channel. The corrections in all other channels are moderate. Methods to also obtain information on exclusive transitions will be discussed.

Monday 28 March

PPE SEMINAR

at 16.30 hrs – Auditorium

Experimental overview and preliminary results from E791 – a charm physics experiment at Fermilab

by Sudeshna BANERJEE / Fermilab

Experiment E791 used a 500 GeV beam of negative pions on heavy segmented target to study production and decay properties of charm mesons and baryons. This experiment did not have any specific trigger requirements and therefore could collect a massive data sample to cover a broad range of physics topics. Analysis is being done on topics like lifetimes of charm mesons and baryons, mixing, form factors, flavour changing neutral current, doubly Cabibbo suppressed decays, hadroproduction of charm and many others. This talk will describe the experiment and then go over the major analysis projects.

Tuesday 29 March

SPS AND LEAR EXPERIMENTS COMMITTEE

at 09.00 – Auditorium

Open session

1. Study of the $\bar{p}p \rightarrow \bar{\nu}\nu$ charge exchange reaction at LEAR : results from experiments PS199 and PS206 : F. Bradamante.
2. Status report from NA52 : K. Pretzl.
3. Status report from NA48 : B. Peyaud.

Closed session

on Tuesday 29 March
at 09.00 hrs – Auditorium

Tuesday 29 March

PRESENTATION

at 10.00 hrs – CN Auditorium
bldg 31/3-005

StorageWorks: New Storage solutions from DIGITAL
by Jerry BACKLIN / European Storage Specialist,
Digital Technical Support Centre, Sophia Antipolis,
France

DIGITAL will present new products in the award winning StorageWorks family, a flexible, modular system for connecting and packaging modern high performance storage solutions. (disks, tapes, CDROMs) StorageWorks is suitable for configurations ranging from workstations/PCs to large computer centre file servers.

Of the new products to be described, will be storage devices, RAID controllers, and host interconnects. There will also be special talk about the use of StorageWorks on non-DEC platforms, e.g. Novell(r) and Sun(r). If there is time and interest, a tutorial on RAID technologies will be included at the end.

Tuesday 29 March

PRESENTATION

10.30 hrs – AT Auditorium (en **Français**)

14.00 hrs – AT Auditorium (in **English**)

bldg 30, 7th floor

EDH (Electronic Document Handling)

Présentation des caractéristiques de la nouvelle version 1.3.2. (Mac, MsWindows and X-Windows)

Presentation of the features of the new 1.3.2 version for Mac, MsWindows and X-Windows

by Olivier DELERM & Jurgen DE JONGHE / CERN-AS

Nous présenterons les nouvelles fonctionnalités de EDH 1.3.2: possibilité de dériver un document vers d'autres personnes lors de l'envoi et de la signature, etc. Cette présentation est *destinée aux personnes qui ont déjà une connaissance de EDH.*

We will present the new functionalities in EDH 1.3.2: possibility to forward a document to other persons while sending and approving, etc. This presentation is *intended for persons who have some prior knowledge of EDH.*

EDUCATION SERVICES EDUCATIFS

ENSEIGNEMENT GÉNÉRAL

Tél. 5811

Jeudi 24 mars

à 13.00 h – Amphithéâtre

Science pour tous

par Rafel CARRERAS

ACADEMIC TRAINING

Tel. 3127

LECTURE SERIES

21, 22, 23, 24 & 25 March

11.00 to 12.00 hrs – Auditorium

Cosmology and the origin of structure

by R. BRANDENBERGER / Brown University,
Providence, USA

With the recent discovery of anisotropies in the cosmic microwave background and with improved deeper redshift surveys, cosmology has entered a new era as a quantitative science. In these lectures, an introduction to modern cosmology will be given, focusing in particular on theories of the origin of structure in the universe. The lectures will begin with an overview of the successes and problems of standard big bang cosmology. The Inflationary Universe scenario (discussed next in the lectures) provides a solution to some of the main problems of standard cosmology. It will be shown how inflation gives rise to a mechanism producing structure in the universe. Alternative models of structure formation based on topological defects such as cosmic strings which form during a phase transition in the very early universe will be discussed.