

Evidence will be presented for kinematic and charge correlations of B mesons with charged pions and kaons. Using a new technique, a sample of over 80,000 partially reconstructed B mesons is obtained in 3.5×10^6 hadronic Z^0 decays recorded using the OPAL detector at LEP. The invariant mass distributions of $B^+\pi^-$ and B^+K^- combinations show enhancements consistent with the decays of P-wave resonances of a b antiquark and a light quark. We observe an excess of $1,738 \pm 195 B^+\pi^-$ pairs with invariant masses in the range 5.60-5.85 GeV and an excess of $149 \pm 31 B^+K^-$ pairs with invariant masses in the range 5.80-6.00 GeV. From a study of π -B charge-flavor correlations we conclude that the production flavor of a B meson can be tagged with the charge of a pion in an appropriately chosen kinematic region, and that the performance of this flavor tag compares favorably in Z^0 decays with lepton-based tags.

EDUCATION SERVICES EDUCATIFS

ACADEMIC TRAINING

Tel. 3127

LECTURE SERIES

6, 7, 8, 9 & 10 February

11.00 to 12.00 hrs – Auditorium

History of the XXth Century Physics

by S. KAPITZA / Academy of Sciences, Moscow, Russia

The meaning and message of the history of science will be discussed with relevance to XX century physics. This decisive period began in 1894-95 with the discoveries of the electron, X-rays and radioactivity, with the consequent development of relativity and quantum physics. Connections of the development of science and society in XX century with culture and the influence on industry will be examined. Finally, the corruption of physics by the military will be considered. The influence of physics on chemistry and biology will be briefly treated and the impact of the approach and method of physics on modern thinking will be assessed. It should be kept in mind that the history of science is not a way of getting a simplified or adulterated presentation of the subject, in this case of physics and so some understanding of general physics will be assumed. On the other hand, the broader generalisations of the history of ideas and events are to be illustrated (if not proven) by the facts (and myths) of science. Finally, as an exercise in a study of science and society, history of physics may lead to a better understanding of the present predicament of humankind, that is certainly now facing a decisive period of its development. That is why the whole subject as a chapter of history may be of some immediate, if not practical interest today.

Tuesday 7 February*

COMPUTING SEMINAR

at 16.00 hrs – CN Auditorium, bldg 31/3-005

Entering Spaceland

by Jean-Francis BALAGUER & Enrico GOBBETTI / CRS4, Italy

Organiser : D. Kemp / CN

* Please note unusual day

Thursday 9 February

CERN COLLOQUIUM

at 16.30 hrs – Auditorium

Hubble Space Telescope Images : from collisions with Jupiter to ancient clusters of galaxies

by A. KINNEY / Space Telescope Science Institute, Baltimore

ENSEIGNEMENT GÉNÉRAL

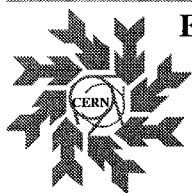
Tél. 5811

Jeudi 2 février

à 13.00 h – Amphithéâtre

Science pour tous

par Rafel CARRERAS



ENSEIGNEMENT TECHNIQUE TECHNICAL TRAINING

Monique Duval ☎ 44.60
eductech@cernvm

Informations sur les cours, dates et places disponibles sur serveur :
Information about the courses, dates and places available on server :

PE Division - SRV1_PE (Guest) - **COM - TRAINING** -
CoursET.fm (sans mot de passe - no password)

Technical seminar

4 days - from March 27 (14 h.00)
to March 31 (12 h.00)

Principles of Signal Integrity for Semiconductor Packaging, Printed Wiring Boards, Connectors and Cabling

Dr. Edward P. Sayre
North East Systems Associates
Prof. Istvan Novak
Technical University of Budapest

This course is aimed at practising electronics engineers and senior technicians to give them a thorough understanding of the different factors affecting the signal quality of high speed digital signals.

The first two days (1st module) are focused on those who have to deal with printed circuit board (PCB) layout of digital circuits. The following days (2nd module) deal with conventional and advanced buffers and clock networks and cover the special aspects of simulation and measurement techniques.

1st module

Introduction and Overview of Interconnect Technology

- VLSI semiconductor packaging - PGA vs SMT, materials and construction.
- MCM packaging options.
- State-of-the-art in Printed Wiring Boards and back planes
- Back plane connectors - materials, construction methods, electrical and signal considerations.
- High performance cables - materials, construction methods, electrical and signal considerations.

Introduction to Time Domain Reflectometry, Transmission and Crosstalk Testing

- Printed wiring board measurement of impedance, propagation delay, risetime bandwidth, forward and backward crosstalk.
- Differential impedance theory and experimental measurements. Test objects include printed wiring board and cable assemblies.
- Design of printed wiring board, connector and cable evaluation technology, evaluation test cases.

Principles of Signal Integrity Engineering

- Review of Transmission Line Theory - lossless transmission

lines, resistive, non-ideal termination, lumped parasitic elements in a transmission line environment, lossy lines, on-chip metalization. Electrical scaling laws - theory vs. experimental.

- Analysis of distributed and discrete crosstalk.
- Review of pertinent semi-conductor theory, technologies and principles for Bus driving.
- Circuit theory analysis of interconnects - Bus loading and fan out considerations. SPICE and other circuit simulations.
- Bypass and bulk storage problems in high speed design involving fast edge rate Bi-polar, Bi-CMOS and CMOS designs.

Printed circuit impedance and propagation delay prediction models

- Classical formulas for impedance and propagation delay. Limitations in the use of these formulas.
- Overview of numerical methods of field theory to predict capacitance inductance, impedance, propagation delay and crosstalk in coupled signal traces.
- Discussion of the effects of material dimensions and homogeneity, dielectric constant, line dimensions in printed wiring board design. Losses in interconnect systems.

2nd module

Clock Architecture, Sources and Distribution

- Clock sources, drivers and buffers - global and local.
- Clock skew, skew management, PLL skew control.
- Clock distribution topologies - star, daisy chain, H-tree.
- Frequency and digital domain simulations and measurements.

EMC/EMI control and effects in digital systems

- The role of signal integrity in improving EMI performance
- Design principles for power distribution, cable termination, etc.
- Bypass and bulk storage problems.
- EMI testing review - FCC, VDE compliance.

Summary and discussion

- Design rule development for signal integrity in the CAD environment.
- Real life bus topologies - FutureBus+, multi-drop stub lengths controlled risetime drivers, connector crosstalk effects.
- Correlation of TDR, TDT and crosstalk measurements to reality.

If you wish to apply for this course, please fill in the usual "Application for training" form which can be obtained from your Divisional secretariat or your Divisional Training Officer (DTO).

Each module may be followed separately. Please indicate clearly on the application form for which module you wish to apply (1st module - 2nd module - both modules).

A financial contribution of CHF 400,- per person and per module will be charged to the Divisions.

Technical Seminar

PERL courses

Tom Christiansen - USA

General background of PERL

While shell scripts are often touted as one of Unix's strengths, the philosophy of having many dedicated programs each doing one thing well becomes a weakness as the complexity and magnitude of the problems increase. Performance and maintainability both suffer. The shell lacks the data structures, control flow mechanisms, and error handling procedures needed to conveniently support all but the simplest of tasks. The deficiencies have historically inspired programmers either to devise inscrutable hacks or break down and write a C program for a comparatively simple task. Even awk, the most general-purpose Unix tool (apart from the C compiler) lacks certain programming facilities and access to low-level system attributes needed for many medium-sized systems programming tasks.

Perl, the most significant general-purpose Unix tool to appear in the last decade addresses these and other issues. Perl is a publicly available and highly portable interpreted programming language occupying the large niche between shell and C programming. Perl's syntax and features resemble C, in combination with the best parts of sh, sed, awk, and several other powerful UNIX tools. Perl programs are often clearer and cleaner than equivalent shell scripts, and are usually significantly more efficient. As such it is excellent for many system management tasks.

Because Perl is one program rather than a dozen, it is often cleaner to express a programming problem in perl than in the shell and its myriad allies, is dramatically more efficient, and can address problem hitherto accessible only to crack C programmers. Perl is a C-like interpreted language in wide use in the Unix community, especially in sysadmin circles. Because it incorporates aspects of more than a dozen other Unix tools, experienced Unix users will come up to speed on Perl rapidly.

COMPREHENSIVE PERL 4 PROGRAMMING FOR UNIX PROGRAMMERS

March 27 to March 31 (5 days)

This 5-day course with 50% labwork is suitable for experienced Unix programmers who have either never looked at Perl before or have only just begun to use it. It is **essential** that students have a strong background in UNIX shell programming, with a good working knowledge of regular expressions. Some background in sed, awk, and some C programming would be highly useful but not strictly essential.

Topics of this tutorial include detailed descriptions and numerous examples of the philosophy, syntax, and semantics of the language; using the Perl debugger; data types; operators; control flow; regular expressions; I/O facilities; sorting; bit vectors; binary i/o; the perl library; packages; exception handling; accessing C include files; TCP client/server socket programming.

PERL5 PROGRAMMING FOR PERL PROGRAMMERS

April 3 and 4, 1995 (2 days)

This 2-day lab course is designed for programmers already experienced with Perl who would like to learn how to use the new facilities offered in the version 5.0 release. Students with a firm background in Perl will benefit most from this course. The PERL4 course is also a sufficient prerequisite.

Topics of this tutorial include how to use an overview of how perl5 differs from perl4; compiler pragmas; support for programming in the large; modules; extended regular expressions; using references to create complex datatypes; object-oriented programming; generic transparent method access using tie(); dynamic and autoloading; writing your own perl extensions in C; survey of existing extensions.

This two-day course is also 50% lab.

If you wish to apply for this course, please fill in the usual "Application for training" form which can be obtained from your Divisional secretariat or your Divisional Training Officer (DTO).

A financial contribution of CHF 1000,- per person will be charged to the Divisions for the Perl 4 course and CHF 400. for the Perl 5 one.

Permanence Bureautique

Lundi 6 février 1995
Enseignement Technique - Bât. 593

Les permanences "Bureautique", assurées chaque premier lundi du mois par Valérie Huret, sont ouvertes à tout le monde et vous permettent de résoudre les petits problèmes particuliers que vous pose l'utilisation des logiciels courants utilisés en bureautique, de découvrir les nouvelles fonctions des plus récentes versions ou une première initiation à de nouveaux logiciels.

Le matin, Valérie pourra résoudre vos problèmes personnels que vous pouvez préalablement lui soumettre par courrier électronique adressé à :

Valerie_Huret@adminmail1

L'après-midi est consacré à un atelier sur un thème donné dont le programme est fixé chaque mois au vu des demandes les plus importantes. L'atelier de ce mois a pour thème

WORD
Mailing et Glossaires