

SEMINARS SEMINAIRES

Monday 6 February

TECHNICAL PRESENTATION

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

A typical case of technology exchange between CERN and Industry

by Sten WALLER / Bofors Aerotronics AB,
Sweden

Sten WALLER will present the successful transfer from CERN and implementation in his company of a new technology, first developed at CERN, to produce thin paraboloidal VUV-mirrors for their RICH-counters in DELPHI. As a result 300 mirrors have been produced by heat-forming 6 mm thick float-glass at about 610°C, followed by vacuum deposition of a 50 nm thick layer of Al and a 60 nm thick protective layer of MgF₂. The method used for industrial production, and the quality control of the mirrors, will be described. An average reflectivity of more than 85% in the wavelength region 165-200 nm has been achieved in production. The focal spot obtained by shining parallel light on the mirrors contained, on the average, 98% of the light within a circle of 1.2 mm diameter. The mirrors are presently being mounted in the Barrel RICH in bldg 16 where they may be seen after the presentation.

Information : M. Diraison / FI / 4585

Monday 6 February

EP SEMINAR

at 16.30 hrs - Auditorium

Development and tests of a new silicon microstrip detector

by A. PEISERT / CERN

Silicon microstrip detectors with capacitive coupling between the diode and the metallization allow to decouple the diode leakage current from the input of the amplifier and reduce the dynamic range of the ADCs. Integrating the decoupling capacitor on the VLSI electronic chip is not possible due to lack of space. The diodes are provided with the biasing potential by individual polysilicon resistors, which leaves the readout pitch a free parameter. The position resolution of these detectors measured with high energy beam particles is comparable with that of traditional detectors. Electrical characteristics, position resolution and radiation resistance of this new type of detector will be discussed.

Wednesday 8 February

PRESENTATION

at 10.30 hrs - DD Auditorium
bldg 31, 3-005

Automatically exploiting parallelism in FORTRAN programs for Cray Supercomputers

by Steve REINHARDT / Cray Research, Inc.

Part 1 will cover parallelism as it can be defined and detected in FORTRAN programs, in a machine-independent, abstract way. Many examples of loops which display or inhibit parallelism will be discussed. Some examples using the proposed FORTRAN 8X standard array syntax will be given.

Part 2 will describe Cray Research's Autotasking product, including what kinds of parallelism it can and cannot detect, how it maps that parallelism onto Cray hardware, and how it coordinates with vectorization to provide high performance. Examples of constructs which Autotasking can and cannot detect will be given. Directives which users can add to aid Autotasking will be described. Results of using Autotasking on common numerical kernels and some real applications will be given.

Steven Reinhardt graduated from Yale University in 1980 with a B.S. in Computer Science and immediately joined Cray. He worked for 4 years on the Cray Operating System (COS), then for 3 years on Cray's UNIX(tm)-based UNICOS operating system. He is currently a member of the operating systems group which efficiently uses multiple-CPU machines and coordinates effectively with user-mode parallel software.

Wednesday 8 February

THEORETICAL SEMINAR

at 14.00 hrs - TH Conference Room

Do wormholes kill the cosmological constant?

by G. VENEZIANO / CERN

Coleman's recent proposal that wormholes suppress the cosmological constant is recalled and criticized. An alternative mechanism is presented and compared to Coleman's.

Wednesday 8 February

COMPUTER SEMINAR

at 16.00 hrs - Auditorium*

Parallel processors and algorithms for image processing

by Per-Erik DANIELSSON / Linköping University, Sweden

Image processing has always been identified as an application area for parallel processing. New opportunities in this direction arise as VLSI technology makes it possible to move processing power closer to sensors. However, simplicity and speed must always be traded against programmability. A few architectures (Systolic Array Pipelines, MIMD, SIMD) will be briefly surveyed. Utilizing parallelism often requires a total redesign of

existing algorithms. This will be illustrated in connection with two SIMD machines : the bit-serial GAPP array, and the coarse-grained PICAP3 under development in the EE Department of Linköping University.

Per-Erik Danielsson has been Professor of Computer Engineering at the University of Linköping since 1971, and since 1972 his research efforts have been concentrated on computerized picture processing and its applications. He is responsible for the PICAP group in the Linköping Department of Electrical Engineering. From 1980-81 he was a Visiting Scientist at the IBM Research Division San Jose Laboratory, and 1985-86 a Visiting Research Fellow at the General Electric Research and Development Center, Schenectady, New York.

* Coffee and tea will be served at 15.30 hrs

Thursday 9 February

PRESENTATION

at 10.00 hrs - LEP Auditorium
bldg 30, 7th floor

New products presentation

by Franklin DALLMANN / Digital Equipment Corporation, Zurich

- New mid-range VAX family (VAX 6310/6320/6330/6340/6350/6360)
- New Storage products (SA550/SA650/RA70/TA90)
- New Mass Storage Controller (HSC40)
- Optical Disc Jukebox (R V64)

Language : English

Information : M. Cipriotti / DD / 4903 /

Thursday 9 February

CERN PARTICLE PHYSICS SEMINAR

at 14.15 hrs* - Auditorium

Physics at UNK

Introduction	C. Rubbia
	G. Brianti
Status of the UNK machine and experimental programme	N. Tyurin
Detection of the ν_{μ} at UNK	K. Winter
Experimental areas and detectors at the UNK collider	A. Vorobyov
First ideas on a 6 TeVpp collider	/.
THE PHYSICS AT 6 TeV	G. Altarelli
6 TeV events-experimental aspects	A. Norton

Information : L. Montanet / EP / 6552

* Please note unusual time!

Friday 10 February

PRESENTATION

09.30 to 12.30 hrs & 14.00 to 16.00 hrs
DD Auditorium, bldg 31, 3-005

MIPS RISC Technology Seminar

by John Mashey, Vice President of
Technology, MIPS Computer Systems, USA

It is widely recognized that RISC architecture is the design of choice for computing, computing related and embedded controller applications for the 1990s. The leap in performance as well as price/performance offered by good RISC implementations versus traditional processor designs is motivating the major high technology companies to adopt RISC designs as a strategic element for success. The presentations will cover the MIPS RISC components, RISC compilers and RISC/os. This hardware and software is used by the DEC and Silicon Graphics personal workstations. The seminar will be given by specialists from MIPS Computer Systems, USA.

- 09.30 Introduction, MIPS Overview, RISC in Perspective
- 10.15 MIPS RISC Architecture - hardware
- 11.00 Break
- 11.20 MIPS RISC Architecture - compilers and performance
- 12.30 End of morning session
- 14.00 The afternoon session will be determined in the morning according to the interests of the audience; if necessary, there will be parallel sessions in the DD Auditorium and DD Conference Room 1 in building 600. Possible topics are
 - UNIX Environment and Development Support,
 - Hardware design details,
 - FORTRAN compiler details
- 16.00 End of afternoon session

Information : Ian Willers / DD / 3066

Monday 13 February

PROTON SYNCHROTRON AND SYNCHRO-CYCLOTRON COMMITTEE

Open session

at 14.00 hrs - Council Chamber

1. Status Report on the ISOLDE programme (B. Jonson).
2. Proposal : Production of ^7F at the CERN SC (CERN-Geneva; PSCC/88-37/P116; 88-38/ S116; H. Ravn).
3. Status reports on the following LEAR experiments :
 - PS 194 : New measurements of antiproton-atom

collisions : ionization, dE/dX , X-rays and channelling (Aarhus Univ.-CERN-PSI-Stockholm MSI; PSCC/89-5/P64Add. 4; K. Elsener).
 PS 196 : Precision comparison of p and $\bar{p}$ masses in a Penning Trap (Harvard Univ.-Mainz Univ., Inst. of Physics-Univ. of Washington; G. Gabrielse).

PS 201 : Study of p and n annihilations at LEAR with OBELIX, a large acceptance and high resolution detector based on the Open Axial Field Spectrometer (Bologna Univ./INFN-Brescia Univ.-Cagliari Univ.-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-Udine Univ./INFN; PSCC/89-2/M294).

Closed session

Tuesday 14 February
 at 09.00 hrs - 6th floor Conference Room,
 Main building

TRAINING AND EDUCATION ENSEIGNEMENT

Mardi 7 février

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

ENSEIGNEMENT GENERAL

Tél. 2844-5811

Jeudi 9 février

de 13.00 h à 13.30 h - Auditorium

Science pour tous

par R. CARRERAS

Monday 13 February

EP SEMINAR

at 16.30 hrs - Auditorium

New results from $p\bar{p}$ annihilation at rest

by R. LANDUA / CERN

The ASTERIX experiment (PS 171) at LEAR has pioneered the study of $p\bar{p}$ annihilations at rest from atomic P states. The comparison of several two-body branching ratios (nn , KK , $\rho\rho$, $n\bar{n}$) for annihilation with initial angular momentum $L = 1$ (P wave) and $L = 0$ (S wave) exhibits a strong dependence on the angular momentum and the isospin of the initial state. Theoretical models, based on quark-antiquark annihilation and rearrangement, start to provide qualitative explanations for some of the observed 'dynamical' selection rules. The suppression of the annihilation channel $p\bar{p} \rightarrow T\bar{T} \sim E(1420)$ from atomic P states suggests a pseudo-scalar nature of the $E(1420)$ meson.

ACADEMIC TRAINING

Tel. 2844-2460

7, 8, 9 & 10 February

11.00 to 12.00 hrs - Auditorium

Models of the brain memory

by M. MEZARD / Ecole Normale Supérieure,
 Paris

14,15,16&17 February

11.00 to 12.00 hrs - Auditorium

**Introduction to particle physics
 for non particle physicists**

by M. JACOB / CERN-TH

This introduction to particle physics will consist of three parts.

The first will be a general introduction to particle physics as it is today, its recent achievements and the questions under study, facts and hopes.

The second will be a review of particle physics as it developed over the past forty years. How we gradually understood the weak interactions, the strong interactions and the inner structure of the proton.

The third part will cover the connections between particle physics and cosmology.