

RESULTS OF THE PENSION FUND IN 1992

In 1992, the Fund's return on investments was 8.1 %. This performance is highly satisfactory, particularly in view of the fact that it was achieved without departing from the policy of caution which any institutional investor has to follow and on which the Fund's entire investment strategy is based.

CONCLUSIONS

These graphs and statistics are taken from the 1992 Annual Report of the Pension Fund (CERN/1974-CERN/FC/3615), which members and beneficiaries may obtain from Divisional Secretariats or the Administration of the Fund (Tel. 7672738 or 7672742) respectively. The Annual Report contains detailed information on all aspects of the Fund's activities, including movable assets and real-estate investments, trends in the situation concerning members and beneficiaries, and the main matters dealt with and the work done by the Fund's bodies. If you are interested in the affairs of your Pension Fund, we strongly encourage you to read the Annual Report and to attend the Annual General Meeting, whose agenda you will find above.

SEMINARS SEMINAIRES

Monday 13 September

PPE SEMINAR

at 16.30 hrs – Auditorium

Observation of the decay $\tau^- \rightarrow \pi^- \pi^+ \pi^- 2\pi^0 \nu_\tau$

by K.K. GAN / Ohio State University

The decay $\tau^- \rightarrow \pi^- \pi^+ \pi^- 2\pi^0 \nu_\tau$ has been observed in e^+e^- annihilation using the CLEO II detector at the Cornell Electron Storage Ring (CESR). The branching ratio is measured to be significantly larger than that of its isospin partner $\tau^- \rightarrow \pi^- \pi^+ \pi^- \pi^+ \pi^- \nu_\tau$. A large ω substructure has also been observed, corresponding to a new decay $\tau^- \rightarrow \pi^- \omega \pi^0 \nu_\tau$.

Tuesday 14 September

PRESENTATION

at 10.00 hrs – CN Auditorium

bldg 31/3-005

The COJYP HyperPanel II

by Jean-Yves ASTIER / Original designer
and others of COJYP

Released in 1990 by COJYP (Saclay, France) and distributed in Switzerland by GATEC SA, HyperPanel II is a complete prototyping and development environment aimed at multimedia & real-time and control application generation. HyperPanel II allows to build prototypes swiftly and to evolve to final applications with the same toolset, with no compromise on functionality or performance. HyperPanel's power and versatility has been demonstrated in many demanding applications, including real-time image processing, real-time display panels for industrial applications and geographical information systems. HyperPanel II is currently in use at major industrial sites, including Alcatel,

Alpha-Romeo, Syseca, EDF, Matra and RATP. Written in C, HyperPanel II is currently running on major workstation platforms (Sun, HP, Silicon Graphics, Stratus, Apple Mac Quadra), and is currently being ported to the PC.

Information : P. Vaschalde, Manager / GATEC SA,
Meyrin, tel 785 6364

Wednesday 15 September

PS SEMINAR

at 11.00 hrs – PS Auditorium

Bunch trains in LEP

by E. KEIL / CERN-SL

A proposal is presented to operate LEP with bunch trains (instead of single bunches, currently) consisting of up to seven bunches with about 20 m spacing, colliding with a horizontal crossing angle of about 1 mrad. The design criteria, the implications on LEP and its injectors, and the results of recent MD experiments are discussed.

Wednesday 15 September

THEORETICAL SEMINAR

at 14.00 hrs – TH Conference Room

A large class of new gravitational and axionic solutions for four-dimensional superstrings

by Elias KIRITSIS / CERN

A large class of new 4D superstring vacua with non-trivial/singular geometries, space-time supersymmetry and other background fields (axion, dilaton) are found. Killing symmetries are generic and are associated with non-trivial dilaton and antisymmetric tensor fields. Duality symmetries

preserving $N = 2$ superconformal invariance are employed to generate a large class of explicit metrics for non-compact 4D Calabi-Yau manifolds with killing symmetries. We comment on some of our solutions which have interesting singularity properties and cosmological interpretation.

Wednesday 15 September

PRESENTATION

at 14.00 hrs – CN Auditorium
bldg 31/3-005

The Cray Progress with the MPP Project

by Tom MACDONALD / Project Leader,
Cray MPP Software Group

Cray Research has just delivered its first Cray-T3D MPP computer to the Pittsburgh Supercomputing Center. At that occasion, a brief overview of the Cray T3D hardware will provide insight to the best way to get performance from highly parallel programs. An integral part of any computer system is the programming model because most users program with high level languages. For this reason, Cray Research has designed an MPP Fortran Programming Model that compliments the hardware by permitting a variety of programming styles. These styles include message passing, worksharing, and array syntax. This Cray Fortran Programming Model enables both data parallel and control parallel programming techniques. During the presentation, the Cray MPP Fortran Programming Model is compared with the new emerging HPF language specification. An HPF goal is to provide both portability and high performance across multiple architectures. Issues facing HPF programmers are discussed.

Information : Les Robertson / CN /les@cernvm

Wednesday 15 September

COMPUTING SEMINAR

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

Moving a large VM/CMS User Community to UNIX

by Iain STINSON / Deputy Computing Director,
University of Liverpool

The talk will describe the experiences of the Computing Services Department at the University of Liverpool in moving their VM/CMS service to UNIX. The VM service at the University was actively used by researchers and students from many disciplines for more than ten years. The system was liked and deemed to be a 'good system' by the user community. The decision to move to a UNIX system was made in a review of the University's IT strategy and accepted by the user community at large though the challenges of the migration were not at that time addressed. The talk will be in three main parts: the first sets out the background and describes the types of services that were provided under the VM system; the second part discusses the reasons for moving to UNIX and the third (and longest) part gives some details of the activities undertaken to achieve the migration. The talk will conclude with a review of the whole migration process and an assessment of how successful it has been.

Thursday 16 September

PRESENTATION

at 09.30 hrs – CN Auditorium
bldg 31/3-005

Bipolar & CMOS ASIC Technologies by Harris.

by P. MURPHY & P. SCHUBERT / Harris
Semiconductors, Munich (D)
& G. PITTET / Basix, Zurich (CH)

The IC processes and libraries offered by Harris Semiconductor on their FASTRACK ASIC design system will be discussed. The processes include high performance dielectrically isolated bipolar technologies and high speed BiCMOS technologies for mixed signal applications. FASTRACK is an IC design system installed onto UNIX based workstations, as SUN machines, and running on Cadence Analog Artist with extensions from Harris to facilitate device design, mixed analog/digital simulation and parametric yield prediction. The presentation is planned to last about 1h30 and will have a minimum of 80%/20% of technical/commercial content ratio. It will start with a general introduction on the range of Harris technologies and will follow with the core of the FASTRACK design system description. In the conclusions complementary informations on commercial topics and training will be given.

Language : English

Information :

F. Formenti / ECP / 4451 / ANT@CERNVM

Thursday 16 September

THEORETICAL SEMINAR

at 14.00 hrs – TH Conference Room

Baryogenesis and low-energy CP violation

by J. ORLOFF / CERN

After a somewhat detailed review of how Sakharov's conditions for baryogenesis can be met at the electroweak phase transition, we raise the potential problems in a pure Standard Model approach, and in particular the upper bound on the Higgs mass. A left-right symmetric extension of the Standard Model can both cure these problems and offer a natural connection between the CP violation needed for baryogenesis and for neutral K physics.

Friday 17 September

PRESENTATION

at 10.30 hrs – ECP Conference Room
bldg 13/2-005

HP's Distributed Computing Program

by Joe SVENTEK / Consulting Engineer,
Hewlett-Packard Company

Hewlett-Packard's Distributed Computing Program supplies the distributed system middleware available for the 700 series workstations and the 800 series server systems. There are three broad categories of products :

- Distributed Computing Environment (DCE)
- Cluster Computing (Task Broker)
- Distributed Object Management (Distributed Smalltalk and HP ORB Plus)

This talk will describe HP's overall distributed computing strategy and how the products in these categories contribute to that strategy.

(In the afternoon, the speaker will discuss future directions of COSE and the Object Management Group – OMG)

Information :

Alan Silverman / CN / alan@vxcern.cern.ch

Vendredi 17 Septembre

SÉMINAIRE PCAD

à 10.30 h – Auditorium CN
bât. 31/3-005

Matin : 10.30-12.15 h

- Pcad et son environnement au CERN – Formation
- Interfaces Pcad – produits tiers (Ecam, Edif, Dxf, Gerber)
- Pc-bank – Routeur Shapetech
- Pcad 6., Pcad 7..

Après-midi : 14.00-17.15 h

- Pcad a 10 ans
- Réunion du club des utilisateurs de Pcad–FRANCE
- Débat : méthodologie.
Comment aborder et mener à bien un travail avec Pcad?

Intervenants :

- Ray Turner / Altium - USA
Marc Perez et Nicolas Boudau / Altium–FRANCE
- Gérard Imbault / AOIP, Président du Groupe des utilisateurs de Pcad– FRANCE
- Thierry Romanteau / CEN-SACLAY, Vice-Président du Groupe des utilisateurs de Pcad–FRANCE
- Michel Bourdon et Philippe Cartier-Millon / Auris–FRANCE
- Gérard Schnell / Connexe–GE, Suisse
- Alain Monfort et Yves Grandjean / CERN–ECP
- R.B. Flockhart et Daniel Péron / CERN–CN

Friday 17 September

MEETING ON

PARTICLE PHYSICS PHENOMENOLOGY

at 14.00 hrs – TH Conference Room

Mass limits of invisibly decaying Higgs particles from the LEP data

by K. SRIDHAR / CERN

In the singlet Majoron models, where the $SU(2) \times U(1)$ model is extended by adding a complex singlet spin-zero field and a spontaneously broken global $U(1)$ symmetry, the $SU(2)$ doublet Higgs can decay invisibly into a Majoron pair via its mixing with a singlet. We begin with a brief review of recent work on the implications of these models for Higgs searches at e^+e^- machines, and then discuss results of a detailed analysis of this model in the light of existing data from LEP. This analysis shows that the dominantly doublet Higgs H has a mass limit within ± 6 GeV of the SM limit,

irrespective of the model parameters, but the dominantly singlet one S can be arbitrarily light for sufficiently small mixing angle.

Friday 17 September

CERN COMPUTER COLLOQUIUM

at 14.30 hrs – Auditorium

Whither COSE and OMG?

Prospects for a Common Unix Environment

by Joe SVENTEK / Hewlett-Packard Company

Two industry consortia are attempting to dramatically effect the computer industry in two very different areas : (1) The Common Open Software Environment (COSE) process is an attempt to accelerate the adoption of standards in the UNIX marketplace; by expediting these standards through cooperation of the major UNIX vendors, UNIX should remain a viable operating system platform on the desktop. And (2) The Object Management Group (OMG) attempts to define standards in the arena of object-oriented programming and systems, based upon existing technology. Again, the principal motivation for these activities is to accelerate the adoption of standards, thereby avoiding fragmentation of the marketplace.

The speaker has worked at Berkeley in the early days of BSD Unix, and at Cambridge, England for ANSA (Advanced Network Systems Architecture). He gave the very first Unix course at CERN. He is currently chief architect in the group in Hewlett-Packard responsible for object-oriented systems and is also a member of the COSE development team.

Monday 20 September

DETECTOR SEMINAR

at 11.00 hrs – ECP Conference Room
bldg 13/2-005

**Developments from the
Fermilab Particle Detector Group**

by David ANDERSON / FermiLab

Developments in Csl and new photocathodes for RICH and liquid noble gases will be discussed as well as work with high-rate, resistive chambers and the search for new heavy scintillators.

Monday 20 September

PPE SEMINAR

at 16.30 hrs – Auditorium

Review of Higgs hunting at the Z^0 resonance and its prospects at LEP200

by André SOPCZAK / CERN–PPE

Results from general searches for the Higgs boson of the Minimal Standard Model, and for neutral and charged Higgs bosons of non-minimal Higgs models are reviewed from the four LEP experiments. No signal inconsistent with background is observed in any of the decay channels analyzed. Based on about 5 million hadronic Z^0 decays, a limit is set on the mass of the Minimal Standard Model Higgs boson of about 63-GeV. From the results of direct searches, model independent limits on Higgs boson bremsstrahlung and pair-