

As far as the other asset categories are concerned, the real-estate portfolio recorded a performance of approximately 6% compared to the value of the assets at the end of the year, while the return on the amount owing to the Fund from CERN was 4%. The yield rate from liquid assets was 3%. In this way, real estate, the amount owing and liquid assets contributed significantly to reducing the overall performance, given that these three headings represent over 1400 MCHF.

Conclusions

These graphs and statistics are taken from the 1997 Annual Report of the Pension Fund (CERN/2239-CERN/FC/4060), which members and beneficiaries may obtain from Divisional Secretariats or the Administration of the Fund (Tel. 7679194) 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

Vous pouvez aussi consulter
For information on these seminars, please see
<http://wwwas.cern.ch/Bulletin/Seminars/current.html>

Monday 5 October

COSMOLOGY MEETING

at 14.00 hrs – TH Conference Room, bldg. 4

Particle physics models of inflation and their observational signatures

by D. LYTH / Lancaster University

A model of inflation predicts the spectrum of the primordial index, and in particular the spectral index which is presently constrained to lie in the range $0.8 \leq n \leq 1.2$. In about ten years, n will be determined with an accuracy $\Delta n \sim 0.01$, over the entire range of cosmological scales 1 to 10^4 Mpc. Meanwhile, there is a theory-driven renaissance in inflation model-building, with increasing emphasis on the underlying particle physics. Models and their predictions are surveyed, including the largely unexplored set of models with softly broken supersymmetry and a running inflaton mass.

Monday 5 October

CERN EP SEMINAR

at 16.30 hrs – Auditorium, bldg. 500*

SUSY searches at DELPHI

by Gustavo WOLF / CERN-EP

I will briefly review DELPHI results for searches within the MSSM framework. I will then concentrate on the description of searches in the Gauge Mediated SUSY Breaking framework, also known as Light Gravitino Scenario (LGS). Finally I will describe what searches are still missing in the LGS.

Organiser : *Fabiola Gianotti / CERN-EP*

* Tea & coffee will be served at 16.00 hrs.

Tuesday 6 October

LHCC COMPUTING BOARD

at 11.00 hrs – Council Chamber

Open Session

11.00 Models of Networked analysis at Regional Centers for LHC (L.Perini)

11.45 Status report on LHC++ (J. Shiers)

Mardi 6 Octobre

IT TRAINING TUTORIAL

14.00-16.00 h – Amphithéâtre IT, bât. 31/3-004

Introduction à NICE 95

par Alberto PACE / CERN-IT

Vous voulez savoir comment NICE 95 peut faciliter votre travail ? Venez voir une démonstration de l'environnement 32bit pour les ordinateurs personnels (PC) du CERN, base sur Windows 95. Cette présentation ne demande aucune connaissance préalable ni du PC ni de NICE et sera concentrée sur les services offerts aux utilisateurs des PCs au CERN et sur l'ensemble d'applications disponibles. The presentation will be given in French. Questions in English will be answered in English.

Information: <http://wwwinfo.cern.ch/support/training>

Organisateurs: M.Marquina and R.Ramos /IT-User Support

Tuesday 6 October

LIBRARY TALK

at 15.30 hrs – bldg. 60/6-015

Issues in and Approaches to Electronic Archiving

by David BEARMAN / Archives & Museum Informatics, Pittsburgh, USA

Wednesday 7 October

TECHNICAL PRESENTATION

09.30-15.00 hrs – bât. 304/1-001 A

Laser, Optical Measurement and Signal Analysis

by GMP SA Laser & Photonics Div.(CH) representing Coherent (USA), Physik Instrumente (D), Aerotech (USA), CSO (F), Ocean Optics (USA), Hewlett-Packard (USA), Stanford Research Systems (USA), Burleigh (USA), ILX Lightwave (USA), TMC (USA), SDL (USA)

Items on demonstration:

Laser; Solid-state laser system with diagnostic instruments, laser diodes

Spectroscopy; Miniature fibre optic spectrometer.
Micro-positioning; Laser interferometer, motioning systems, micro-mechanical components and vibration isolation laboratory tables.
Signal analysis; 102.4 kHz two channel network analyser, RF dual phase lock-in amplifier

Language: English, French, German
Information: S. Shearer / SPL-PS / 76360

Wednesday 7 October

PS SEMINAR

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

Wake-field laser acceleration at Ecole Polytechnique

by Denis BERNARD / Ecole Polytechnique, Palaiseau

While accelerator physicists are designing new linear lepton colliders, plasma physicists are exploring the route towards another type of linear collider based on laser-plasma interaction. Recent experiments performed at Ecole Polytechnique have demonstrated accelerating gradients in excess of 1 GeV/m using a longitudinal electron plasma excited by a laser pulse. Some of the problems linked to the design of an actual multi-TeV high luminosity collider — say 5 TeV, $10^{35} \text{ cm}^{-2} \text{ s}^{-1}$ — will also be addressed.

Organiser: Brunto AUTIN / CERN-PS

Wednesday 7 October

COMPUTING SEMINAR

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

Web University – Distance learning and working over high speed Internet

by R. RINTA-FILPPULA / CERN-EP

A Web University (WU) is a project based on the concept of a virtual university. The students and staff at the participating sites can communicate over the Asynchronous Transfer Mode (ATM) and Internet network by using applications like email, World Wide Web (WWW), multicast videoconferencing and Video-on-Demand. The international ATM connections, JAMES ATM and TEN-34, have been provided by the European Commission since 1996.

The Web University started as a co-operative pilot project between CERN and Finnish universities. It concentrates on transferring the latest results of high-energy physics directly to universities. Physics researchers can update their knowledge by participating in CERN seminars and experiments from their own workstations over a real time network based on ATM and Internet technology. Teaching is interactive and it is in principle targeting researchers and postgraduate students, but some courses in physics and information technology have been additionally offered to undergraduate students.

Information: <http://consult.cern.ch/seminars>

Organiser: G. Folger / CERN-IT

Thursday 8 October

TECHNICAL PRESENTATION

at 10.00 to 12.00 hrs – Conference Room, bldg. 40/S2 A01

Harris Semiconductor

by Brian HAGERTY / Director Military and Space Product Line, USA; Steve STRICKLER / Worldwide Marketing Manager Military and Space, USA Thierry

- MELEBECK, Marketing Manager Alcatel SDM & Jean NIZET / European Marketing Manager
- Presentation of the available Rad Hard Technologies for Asic Designs and Production.
Technologies available: fast bipolar, high voltage biCMOS and CMOS
 - Presentation of future Strategy on all Rad Hard products
 - Short presentation of the existing standard products
 - Discussion on future prospect to partner with CERN

Organiser: Peter Denes / 73241

Thursday 8 October

COSMOLOGY MEETING

at 14.00 hrs – TH Conference Room, bldg. 4

Precision Rates for Nucleon Weak Interactions in Primordial Nucleosynthesis and Helium-4 abundance

by G. MIELE / Università di Napoli

I report the results of a detailed calculation of nucleon weak interactions relevant for the neutron to proton density ratio at the onset of primordial nucleosynthesis. Radiative electromagnetic corrections, finite nucleon mass terms, thermal radiative effects on weak processes and on neutrino temperature are taken into account to reduce the theoretical uncertainty on $n \leftrightarrow p$ rates to 1%. This translates into a sensitivity in Helium-4 mass fraction (Y_p) prediction up to 0.001. We find a positive total correction to the Born prediction $\delta Y_p = 0.004$.

Thursday 8 October

LHC PROJECT SEMINAR

at 14.15 hrs – LHC Auditorium, bldg. 30/7th floor

Stability of superconducting strands for the LHC main magnets

by P. BAUER / CERN-LHC

The superconducting strands in the Rutherford type cable can be characterized by their Minimum Quench Energy, i.e. the minimum heat pulse needed to trigger a quench in operation conditions (magnetic field, ambient temperature, current). Point-like (sub mm) a short time (ms) heating has only recently been achieved using the electrical graphite-paste heater technique. This technique has been used in Minimum Quench Energy experiments on strands for the LHC main magnets, designed to operate at 1.9K in peak fields of up to 9T. The aim was to establish the influence of various strand parameters (coating, Cu/Sc ratio, RRR, billet design, cooling) on the Minimum Quench Energy of LHC-type strands. The most striking aspect of repeated measurements on a reference sample is that in open bath conditions the MQE as a function of transport current in subcooled helium can reach hundred times the corresponding value in adiabatic conditions (i.e. with the sample potted in a low conductivity medium). This extraordinary cooling performance of superfluid helium, predicted by many authors, has rarely been shown in superconductor stability experiments.

Friday 9 October

MEETING ON PARTICLE PHYSICS PHENOMENOLOGY

at 14.00 hrs – TH Conference Room, bldg. 4

Tree-level leptonic phenomenology of the complete theory of supersymmetry without R-parity

by Otto KONG / Rochester University

R-parity stands as an ad hoc assumption in SUSY phenomenology. More than 15 years' studies of R-parity violations have been restricted to various limiting scenarios. We illustrate how the single-VEV parametrization provides a workable framework to analyze the phenomenology of the complete theory of SUSY without R-parity and report on some results of our analysis. In particular, we show that large R-parity violation is not ruled out by experiments. A rich and interesting leptonic phenomenology is plausible even at tree-level, with various effects observable at the LEP experiments.

Monday 12 October

ISOLDE SEMINAR

at 15.30 hrs – TH Conference Room, bldg. 4

Application of high gas pressure in study of diffusion mechanisms and in GaN crystal growth

by Witold LOJKOWSKI / High Pressure Research Center Polish Academy of Sciences, Warsaw

Carrying out processes under high gas pressure permits a purely hydrostatic stress state, high temperatures and well controlled temperature gradients to be combined. Application of argon as a high pressure medium allows research on the purely mechanical effect of pressure on materials to be carried out. The fact that the pressure transmitting medium is a gas is particularly important when plastic deformation must be avoided, like during study of diffusion mechanisms. This is the basis for application of high gas pressures in the study of diffusion mechanisms. According to the absolute reaction rate theory, generation of an activated complex of atoms during an elementary diffusion process causes lattice expansion. The degree of expansion - the activation volume of the process can be measured during high pressure diffusion experiments. An example will be provided concerning the identification of the diffusion mechanism in Ti. When nitrogen is the pressure medium, additional research possibilities are open: study of diffusion in nitrides, like GaN. GaN is a material for blue light and high power electronics, which decomposes at temperatures above 1000 °C unless the annealing is carried out under nitrogen pressures of the order of 1 GPa and more. The basics of crystal growth of GaN under high nitrogen pressure will be presented. Furthermore, the potential of high pressure annealing of GaN for improvement of GaN microstructure, recovery of implantation defects and for carrying out diffusion processes in GaN will be presented.

Monday 12 October

CERN EP SEMINAR

at 16.30 hrs – Auditorium, bldg. 500*

Highlights of the Tau 98 Workshop

by Attilio ANDREAZZA / CERN-EP

The high statistics data samples collected at LEP and CLEO have driven τ physics into the era of high precision meas-

urements. The τ lepton has proven to be an effective laboratory for tests of the electroweak theory and QCD and an interesting field for searches of physics beyond the Standard Model. The present status of knowledge about the τ lepton and the τ neutrino, as discussed at the 5th Workshop on Tau Lepton Physics, will be reviewed.

Organiser : Fabiola Gianotti / EP Division

* Tea & coffee will be served at 16.00 hrs.

Tuesday 13 October

TECHNICAL PRESENTATION

at 10.00 hrs – IT Auditorium, bldg. 31/3-004-5

Gigabyte System Network Overview

by Silicon Graphics Inc.

This technical presentation is part of a workshop organised jointly by CERN, the **High Performance Networking Forum**, and its European User Group **EHUG**.

GSN, or Gigabyte System Network, is the product name selected by the "High performance Networking Forum" for Hippi-6400 compliant systems.

The HIPPI-6400 project began in January 1996. The technology of GSN is embodied in several ANSI documents, a MAC chip that implements the PHY standard, switching technology, and a new transfer protocol called ST (Scheduled Transfer Protocol).

A GSN link, simply described, employs a cellular unit of transmission called a micropacket, which consists of 32 data bytes and 8 control bytes with a transmission data rate of 1000 MBytes/sec. A sequence of micropackets makes up a message, or frame. The first micropacket contains a header structure that is identical to Ethernet plus a 32-bit message length field. One could think of GSN as a kind of Gigabyte Ethernet.

The PHY-level chip, named SuMAC, has been operational since December 1997. Multi-vendor hardware incorporating SuMAC chips is now beginning to emerge.

This chip incorporates sufficient buffering for a 1 Km link. The presentation will include detailed information on the design of the links and chips as well as background information on some of the history and motivation represented by the design.

In addition to the Ethernet-like header, the ANSI standard for ST specifies an optional 40-byte ST header. This header is used to capture the semantics of bulk transfer, remote memory access, and the notion of end-to-end data movement transactions. The presentation will present ST concepts in some detail as well as the status of works in progress.

GSN Workshop Agenda

High Performance Networking Forum, and its European User Group **EHUG**.

13.30 Carl Pick, **HNF**

General tendencies and Industrial Products for GSN.

14.15 Arie Van Praag, **CERN**:-

The CERN GSN Lab

14.30 Alberto Guglielmi, **DIGITAL**

Do we need GSN in High Energy Physics data acquisition. Results of simulations around LHC detector architectures.

14.50 Jim Lunney, **Patriot Scientific**

SHBOOM, a 100 MHz + microprocessor.

15.10 John Freisinger, **Essential (ODS)**

GSN activities at Essential (ODS).

15.30 GSN demonstration Networks from SGI on Origin Machines and from Genroco connecting a COMPAQ Alpha to a SUN.

For the latest information see URL: <http://www.cern.ch/HSI/hippi/hug/gsnwsflop>.

Organiser : S. Cannon / IT / 75036

Wednesday 14 October

PS SEMINAR

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

Study of Antihydrogen with ATHENA at the Antiproton Decelerator

by Rolf LANDUA / CERN

Is there a difference between matter and antimatter? The standard model predicts perfect symmetry - a challenge for experimentalists to push measurements of antimatter properties to the highest level of precision. The comparison of the 1S-2S energy difference in hydrogen and antihydrogen atoms could provide the most precise direct symmetry test. The ATHENA experiment at the Antiproton Decelerator (AD) aims at the production and study of antihydrogen atoms at very low kinetic energy. The various phases of the experiment, from the capture of antiprotons and positrons, to recombination, detection, and laser spectroscopy of antihydrogen atoms will be discussed.

Organiser : Bruno AUTIN / CERN-PS

POUR INFORMATION / FOR INFORMATION

3 and 4 November 1998

Joint Meeting of the CERN-SPS and Gran Sasso Scientific Committees

Call for ideas

The scientific Committees of the SPS at CERN and of the Gran Sasso laboratories will meet at CERN on 3 and 4 November 1998, to have a thorough discussion of the opportunities offered by a neutrino beam pointing from CERN to GS. This letter is to call for ideas of experiments that could exploit this beam with the purpose of elucidating the pattern of neutrino masses and mixings. It is suggested that documents of up to 10 pages describing these experiments along with a cost estimate be submitted to both Committees **before October 10, 1998**.

To make the meeting more effective, the documents describing appearance and/or disappearance experiments with or without a near station should contain, in the usual Δm^2 vs. $\sin^2(2\theta)$ plot:

- i) the exclusion curve if no signal is observed;
- ii) the limit curve within which a discovery of neutrino oscillations can be made at the 4 sigma level.

These curves should be based on the reference beams with a shared mode of operation (3×10^{19} proton/year on target) and for 3 years of running. Documents on the High Energy and Low Energy beams are being prepared by the CERN/INFN Working Group and will be released by the end of September.