

*Given these assumptions and assuming that the contribution rate of 24% is maintained, the Fund will be under-capitalized\*\*\* by about 5% in ten years, 20% in 20 years and 40% in 30 years. In this model, the contribution rate must be increased to 30% to maintain full capitalization. It must also be pointed out that this model takes into account an ambitious goal to adjust the discounted rate of return on capital from 5 % to 6 %.*

*Meinrad Pittet  
Consulting Actuary"*

In a document addressed to the Finance Committee and the Committee of Council, the Governing Board declares that it considers it vital to maintain the Fund's technical balance and it endorses the Consulting Actuary's recommendation to increase the overall contribution rate to the Fund to 30 % of reference salaries.

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\* There is a technical deficit when liabilities in the technical balance sheet (i.e. essentially present and future actuarial commitments) exceed assets (i.e. the net assets and future contributions).

\*\* Including ESO staff.

\*\*\* Under-capitalized translates "décapitalisation" in the French original text, which is defined as the situation of a provident fund when it can no longer guarantee all its actuarially calculated commitments from its assets. "Décapitalisation" is the ratio between the technical deficit and the actuarially calculated commitments expressed as a percentage.

## SEMINARS SEMINAIRES

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### Monday 10 September

#### FOURTH MEETING OF THE ECFA-LHC WORKING GROUP ON CALORIMETRY

09.00 to 17.30 hrs – PS Auditorium  
bldg 6/2-024

*Topics to be discussed include various techniques for calorimeters at the LHC based on active media like scintillating fibres, scintillator tiles, crystals, silicon, room temperature liquids, cold liquids (Ar, Kr, Xe); calorimetry requirements for addressing specific physics issues, etc.*

### Lundi 10 septembre

#### SÉMINAIRE AS

à 10.00 h – Amphithéâtre

**Introduction au Macintosh et à quelques logiciels de base**

par Tony SHAVE / CERN-AS-MI

*Nous commençons par la mise en marche et l'arrêt d'un Macintosh, puis poursuivons avec l'utilisation de la souris, des fenêtres, des types de fichiers, des menus, des serveurs de fichiers, du Finder/MultiFinder et des disquettes. Vient ensuite une très brève introduction à Word, QuickMail, FileMaker et aux communications. Cette présentation, qui durera environ une heure et demie, s'adresse au personnel administratif qui dispose depuis peu d'un Macintosh et a besoin d'un simple cours d'introduction. Elle ne remplace pas des cours sur des programmes spécifiques comme Word et n'intéressera pas les utilisateurs expérimentés du Macintosh.*

## Tuesday 11 September

### SPS EXPERIMENTS COMMITTEE

#### Open session

at 09.00 hrs – Auditorium

1. *Proposal for a Precision Measurement of  $\epsilon'/\epsilon$  in CP violating  $K^0 \rightarrow 2\pi$  decays (CERN – Edinburgh – Mainz – Perugia – Pisa – Saclay – Siegen – Torino – Vienna Collaboration; SPSC 90-22/P 253; B. Peyaud).*

#### Closed Session

at 10.30 hrs – 6th floor Conference Room, Main Building

## Tuesday 11 September

### CERN COLLOQUIUM

at 16.30 hrs – Auditorium\*

#### From 1 $\mu\text{m}$ to 1 cm, COBE looks at the Big Bang

by David WILKINSON / Princeton University

*The Cosmic Background Explorer satellite (COBE) was designed to rigorously test the Standard (Big Bang) Cosmological Model. The first test – a 1% fit of the Cosmic Microwave Radiation to a Planck spectrum from  $\lambda = 1$  cm to  $\lambda = 0.5$  mm – has been passed. Large scale ( $> 7^\circ$ ) anisotropy is currently under study with no surprise at the levels of accuracy reported earlier from balloon and Relict 2 radiometers. The third COBE experiment is mapping the absolute flux from the sky at 10 wavelengths from 1  $\mu\text{m}$  to 240  $\mu\text{m}$  – an exceedingly rich data set. The COBE team's main interest is to look for a cosmic infrared background carrying information about the mysterious process of structure formation in the early universe.*

\* Tea and coffee will be served at 16.00 hrs.

## Thursday 13 September\*

### CN SEMINAR

from 10.30 – 12.00 hrs – CN Auditorium  
bldg 31, 3-005

#### Software re-use

by Steven D. FRASER / Bell-Northern Research,  
Canada

*There are two important considerations for the re-use of existing software. Software must be implemented for re-use and it must be easy to retrieve. Effective re-use requires sufficient documentation and modularity, so that the software can be understood by all designers. If the software cannot be easily understood, it will not be re-used. Work was initiated in Smalltalk to evaluate various keyword indexing methodologies three years ago as a prototype re-use navigational aid for designers. It has now progressed to the development of indexing strategies for a DMS development environment. DMS software is developed by 1200 designers at BNR labs in the United States, Canada, and the United Kingdom to support various telephony applications. Guidelines to promote the re-use of existing software and to enhance the re-usability of new software are under development. The principle motivation for*

*software re-use effort is improved productivity and software quality. Productivity is enhanced since the construction of new software can be viewed as an integration process of existing software blocks to satisfy a new requirements. Quality is improved since it is assumed that the construction of software from previously certified components will result in greater product stability with fewer product defects.*

Steven Fraser began as a physicist working in the area of linear synchronous motor design and construction at Queen's University. Since joining the staff of Bell-Northern Research in the spring of 1987, Steven Fraser has pursued research on projects related to software re-use and object-oriented design methodologies.

\* Please note unusual day & time

## Thursday 13 September

### CERN COLLOQUIUM

at 16.30 hrs – Auditorium\*

#### A project for a Solar Sail Propelled Spaceship

by Franco BEVILACQUA / AERITALIA SALpA  
Space Systems Group

*In response to a solicitation from the Columbus Quincentenary Jubilee Commission for a space sail race to Mars, a project has been presented by a joint industry and university team lead by Aeritalia. The project, which has been selected as the European representative in the competition, is based on a 100 m  $\times$  100 m square shaped sail made of 5  $\mu\text{m}$  thick aluminised mylar. The sail is supported by 4 tubes made of Kevlar, deployed along the diagonals by inflating with an inert gas and then rendered rigid by thermal curing. Different navigation strategies have been envisaged for the planetary (from a GTO with a perigee of 1000 km to a passage near the Moon and subsequent escape from Earth gravity) and interplanetary phases (heliocentric orbits with aphelion raising up to the final Mars orbit altitude). The orbit trajectories have been optimised bearing in mind the objectives of minimising flight time and using as far as possible information derived from the on-board sensors only in order to reduce the ground control operations to a minimum. The sail orientation manoeuvres are performed by exploiting the solar radiation pressure. This is implemented by separating the sail centre of pressure from the overall spaceship centre of mass via a deployable truss connected to the sail at one end and to the service module at the other, the first connection leaving 2 degrees of freedom controlled by an electric motor. Finally considerations are made on the materials envisaged together with the relevant manufacturing and assembly processes.*

\* Tea and coffee will be served at 16.00 hrs.

## Friday 14 September

### MEETING ON PARTICLE PHYSICS PHENOMENOLOGY

at 14.00 hrs – TH Conference Room

#### A new window for SUSY at LEP 1

by Jose VALLE / CERN

*When SUSY is realized with spontaneous R parity violation, the single production of charged SUSY particles in Z decays can have experimentally observable rates. In addition, the expected rates for zero events may be enhanced relative to those of the Minimal Supersymmetric Standard Model. Estimates are given for these processes, after taking into account all of the relevant laboratory, cosmological and astrophysical constraints.*

## Monday 17 September

### TECHNICAL PRESENTATION

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

*SMS-Sprint (D) and ISDATA (D) seminar.*

Introduction SMS – Stendel Micro Systems  
Isdata

- Sprint concept
- Sprint Plus a PLD and PROM/EPROM programmer for smaller budgets
- Sprint Expert the new high performance programmer
- Expert derivatives SPRINT Dual  
SPRINT Quad
- Software & software support
- Test vectors
- Calibration
- LOG/iC principles
- Comparison of design methods, SW and HW tools
- Designing and programming a PLD
- Unequal achievements when using different design entry methods
- More demonstrations and wrap-up

Languages : English & French

Information : M. Diraison / FI / 4585

## Monday 17 September

### PROTON SYNCHROTRON & SYNCHRO-CYCLOTRON COMMITTEE

at 14.00 hrs – Council Chamber

#### Open Session

*Report on the PSCC Closed Session held in Cogne (12–15 September, Cogne V PSCC)*

A. Donnachie

## Tuesday 18 September

### DRDC COMMITTEE

at 09.00 hrs – Auditorium

#### Open Session

*Presentation of proposals*

**A Closed Session will follow in the afternoon**

## Tuesday 18 September

### PRESENTATION

#### Developing real-time applications software with VxWorks

by Gregory A. Ott, Vice-President SHS-Engineering AG (Swiss distributors for Software Development Tools)

CN Auditorium, bldg 31, 3-005

Morning 10.00 – 12.00 hrs  
Presentation

Afternoon 14.00 – 17.00 hrs  
VxWorks Demo

Language: English

CN Organizer: Douglas Kemp

## Tuesday 18 September

### CERN PARTICLE PHYSICS SEMINAR

at 16.30 hrs – Auditorium

**Results from deep inelastic muon scattering at 490 GeV/c**

by Mark ADAMS / Fermilab

## Wednesday 19 September

### PS SEMINAR

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

**Highlights from the LEAP-90 Conference**

by R. LANDUA / CERN

## Jeudi 20 septembre

### PRÉSENTATION TECHNIQUE

de 09.30 à 16.00 h – bât. 73/2-027

*Origa Pneumatik AG (CH/D) présente une gamme de vérins pneumatiques sans tige de piston.*

Langues : allemand & français

Renseignements : M. Diraison / FI / 4585