

– a major investment – the PS complex is capable of supplying the required high-brilliance proton beam, and thus play its vital role as LHC pre-injector.

harmoniques radiofréquence jusqu'à 25 GeV et finalement extraites dans la ligne conduisant au SPS. Des ensembles complets de mesures de l'intensité et du profil du faisceau ont été enregistrés dans les machines successives pour différentes conditions. Elles confirment qu'avec le système proposé qui doit encore être mis en oeuvre – ce qui constitue un gros investissement – le complexe du PS est en mesure de fournir le faisceau de protons de brillance élevée requis et donc de remplir son rôle essentiel de préinjecteur pour le LHC.

SEMINARS SEMINAIRES

Monday 31 January

DETECTOR SEMINAR

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

Progress in semiconductor drift detectors

by Pavel REHAK / Brookhaven National Laboratory

Silicon drift detectors are becoming common detectors for tracking and vertexing for experiments in high energy particle and heavy ion physics. Basic ideas of silicon drift detector will be summarized. Results of tests of detectors with drift distance up to 4 cm will be shown. New ideas about the geometry of detector anodes and the front end electronics will be presented. New geometry of anodes allow a better position interpolation in the coordinate along the anodes. The preamplifier based on resistor-less feedback circuit allows the optimum detector-preamplifier performance for the range of leakage currents over 6 orders of magnitude. The results of the performance of the detectors used in Experiments NA-45 and WA-93 will be reported. Plans for applications of silicon drift detectors as elements of vertex detector for the STAR experiment at RHIC and the ALICE experiment at LHC will be presented.

Monday 31 January

SCIENCE AND SOCIETY COLLOQUIUM

at 16.30 hrs – Council Chamber

Recent developments in Strategic Arms Control with the States of the Former Soviet Union

by Stan RIVELES / US Acting Commissioner on the Standing Consultative Committee of the ABM (Antiballistic Missile) treaty

Tuesday 1 February

LEP EXPERIMENTS COMMITTEE

Open Session

Tuesday 1 February

at 09.00 hrs – Auditorium

09.00–09.30	LEP shutdown and report from the 1994 Chamonix Workshop (S. Myers)
09.30–10.00	Status report on LEP II (C. Wyss)
10.00–10.30	Review of LEP I physics (W. Hollik)
10.30–11.00	Review of LEP II physics (and LEP II Workshop update) (F. Zwirner)
11.00–11.30	Coffee break

Reports on the LEP experiments

i) Review of detector technical status and future requirements

ii) Physics goals for 1994 and 1995

11.30–12.15	DELPHI
12.15–13.00	ALEPH
13.00–14.00	Lunch
14.00–14.45	L3
14.45–15.30	OPAL

Closed Session

Tuesday 1 February

at 16.00 hrs – 6th floor Conference Room

to be continued on Wednesday 2 February at 09.00 hrs, same place

Mardi 1 février

PRESENTATION TECHNIQUE

10.00–12.00 h – bât. 54/2-035

Exposé sur la robinetterie industrielle par la société AMRI (F)

- robinetterie à papillon à étanchéité élastomère-plastomère-métallique,
- clapets anti-retour,
- actionneurs et systèmes (pneumatique-électrique-hydraulique) : 1) sectionnement, 2) régulation.

Langue : français

Renseignements : M. Diraison / FI-A / 4585

Wednesday 2 February

ISOLDE SEMINAR

at 11.00 hrs – TH Conference Room

The upper limit on the electron antineutrino mass from the Mainz neutrino mass experiment

by Ch. WEINHEIMER / Institut für Physik, University of Mainz, Germany

The question whether neutrinos are massless or not is one of the most current topics of particle and astro physics. The experimental limits on the neutrino mass without further assumptions on neutrino properties are derived from investigations of weak decays. In the talk the Mainz Neutrino Mass Experiment will be presented, which yielded the presently lowest upper limit on the electron neutrino mass from tritium β -decay. Our integrating solenoid retarding spectrometer is ideally suited for investigating the endpoint region of the tritium β -spectrum, as it offers both high energy resolution and high accepted solid angle. Our data, which give for the first time a detailed view of the spectrum at the endpoint, and the data analysis will be presented. Systematic uncertainties

of the experiment or the theoretical description and future developments will be discussed.

Wednesday 2 February

TIS SEMINAR

at 11.00 hrs – PE Auditorium
Techn. Training, bldg 593, Room 11

Risk assessment

by Martin EVANS / Health and Safety Officer, RAL

As a result of an EC Directive on the Management of Health and Safety at Work, the UK introduced this legislation in January 1993. It puts a duty on the employer to make a "... suitable and sufficient assessment of :

- a) the risks to the health and safety of his employees to which they are exposed whilst at work,
- b) the risks to the health and safety of persons not in his employment arising out of or in connection with the conduct by him of his undertaking".

The Rutherford Appleton Laboratory introduced risk assessments in 1989. The success (or otherwise) of the assessments in reducing accidents is discussed together with the philosophy of current UK official thinking in Health and Safety. Some real worked (simple) examples of assessment are shown to illustrate the concept.

Wednesday 2 February

THEORETICAL SEMINAR

at 14.00 hrs – TH Conference Room

Renormalization group in different fields of physics

by D.V. SHIRKOV / JINR, Dubna

A very simple and general approach to the symmetry that is widely known as the Renormalization Group Symmetry is presented. It essentially uses a functional formulation of group transformations that can be considered as a generalization of self-similarity transformations well known in mathematical physics since last century. This generalized Functional Self-Similarity symmetry and corresponding group transformations are discussed first for a number of simple physical problems taken from diverse fields of classical physics as well as QED. Then we formulate the Renorm Group Method as a regular procedure that essentially improves the approximate solutions near the singularity. After that we discuss relations between different formulations of the Renormalization Group as they appear in various parts of modern theoretical physics. Finally we present various topics in RGM applications in Quantum Field Theory.

Wednesday 2 February

CERN COMPUTER COLLOQUIUM

at 16.30 hrs – Auditorium*

A centralized approach to software improvement

by J.-C. BERNARD / Schlumberger Montrouge Research

Schlumberger's top management realized in 1989 the importance of software engineering practices and process to develop quality software within budget. After a short presentation of the main business of the more than one thousand Schlumberger engineers distributed throughout Europe and the USA, we describe the major decisions we made concerning software development, which were not in line with our usual decentralised style. We explain how our software engineering organization has evolved over the past five years, and conclude with the main findings, suggestions and challenges remaining,

Jean-Claude Bernard is Director, Software Development and Design, Schlumberger Montrouge Research. He was the founder of the Schlumberger Laboratory for Computer Science Europe, the head of the Drilling and Pumping Systems Department in Austin, Texas, and the head of the Software Department in Flopetrol, France. He received degrees in Nuclear Engineering from the Ecole Centrale, Paris (1975), Psychology from Sorbonne, Paris (1976), and DEA in Numerical Analysis and in Scientific Management (AEA) from Université de Paris VII & XI (1977). He is also a reviewer for the EEC on Software Engineering activities (Esprit/ESSI).

* Tea & coffee will be served at 16.00 hrs.

Thursday 3 February

PRESENTATION

from 10.00 to 12.30 hrs – CN Auditorium
bldg 31/3-005

Object-Oriented Analysis and Design with Objecteering/Class-Relation

by Phillippe DESFRAY / Product Manager "Softeam" France

Softeam is a leading company in Object oriented technology for software development automation. Its mission is to supply CASE products and to transfer skills to customers through training courses and consulting in object methodologies such as 'OO Analysis and Design'. Some of the largest companies in Europe are using Softeam's Objecteering, the most comprehensive CASE tool able to provide uninterrupted support from analysis and design to testing, for C++ applications. During a half day seminar Softeam will present the Class-Relation Method, incorporating the new technical issues in the book 'Object Oriented Modelling, the fourth dimension' published by Addison-Wesley, May 1994, and followed by a demonstration of Objecteering V3.2, including its new automated testing capabilities. The agenda is :

- company Overview
- Class-Relation Method :
The Second Generation of Object-Oriented Methods.
 - CR Model
 - CR Methodology
- Hypergenericity : Automating Object-Oriented Design I and Programming
- Objecteering : The Object-Oriented Software Development Automation Solution
- CR modelling
- C++ code generation
- Document generation
- Test generation and execution
- Architecture and Openness
 - Demonstration

Thursday 3 February

TECHNICAL PRESENTATION

15.00-16.30 hrs – Council Chamber

TECHNICAL PRODUCT PREVIEW – Apple Macintosh with PowerPC Chip – the next generation of Personal Computer

by Christian GRABER / Product Manager, Apple
Computer Division, Industrade AG, Wallisellen, Zürich

With the upcoming introduction of RISC based Macintosh Apple will start a new area in personal computing. The PowerPC chip based new models will offer a new level of price performance. During the presentation we will explain the

smooth transition from 680x0 based Macintosh to PowerPC models, show some examples of new extremely fast application and demonstrate MS-DOS/Windows compatibility of the upcoming Macintosh. Our future Unix strategy based on PowerOpen and next generation of servers will be outlined as well. For users of current Macintosh we will present the attractive upgrades to PowerPC.

Language : English

Information : M. Diraison / FI-A / 4585

Thursday 3 February

PRESENTATION

at 16.00 hrs – TH Conference Room

High speed networking from Digital

by Jim KUENZEL / Engineering Manager for High Speed Networking, Product Manager for the GIGASWITCH, Digital, Mass., USA

DIGITAL will present its offering of high speed networking solutions. The presentation will include :

- GIGASWITCH, Digital's award winning FDDI bridge, interconnecting FDDI rings, or single computers at full speed.
- DEChub 900, A high performance hub, embedding multiple technologies on the backplane (Ethernet, TokenRing, FDDI, ATM, etc.). Despite its capabilities, it is of course fully and easily managed with SNMP. All the modules can also be used stand alone.
- ATM. DIGITAL's products in the short and long term for ATM will be described.

Friday 4 February

MEETING ON PARTICLE PHYSICS PHENOMENOLOGY

at 14.00 hrs – TH Conference Room

Some applications of the effective theory for heavy quarks to beauty physics

by U. AGLIETTI / University of Rome

Some applications of the effective theory for heavy quarks to beauty physics are presented. These include the prediction of beauty hadron masses, the computation of the Isgur-Wise function on the lattice and the analysis of non-spectator decay mechanisms in beauty decays.

Tuesday 8 February

PRESENTATION

10.00 to 12.00 hrs – CN Auditorium
bldg 31/3-005

High-Speed Data Acquisition

by J. FOWLIE / Pentland Systems Ltd.

Pentland Systems designs and produces VMEbus products for primarily Input/Output applications. The company, located in Scotland, is one of the suppliers under the VMEbus blanket-purchase contract. At this presentation, the speaker will focus on data-acquisition (DAQ) issues in the domain of 10-25 MSamples/s. In particular, he will discuss or review the following topics :

- Device specifications and their meanings to ensure correct selection of DAQ products,
- Front-end data buffering,
- High-speed conversion techniques,

- Clocking and triggering considerations, and factors affecting performance,
- Popular high-speed data paths (e.g. VME64, Autobahn, VSB, etc.),
- Data-management issues,
- Design and manufacturing details.

Information : L. Pregernig / CN (lfp@cernvm, or ext. 2666)

Wednesday 9 & Thursday 10 February

LINKÖPING (SWEDEN) AT CERN

On 9 and 10 February, five high technology firms with background from the University of Linköping in Sweden, present their products and services. An opening session is held by Christer Svensson from the University of Linköping.

The seminars are organized by the Swedish National Science Research Council, the University of Linköping and the Foundation for Small Business Development in Linköping.

Wednesday 9 February

TECHNICAL SEMINAR IN HARD- AND SOFTWARE

09.30–12.00 Conference room B, bldg 61, 1st floor

09.30–10.15 Introduction and overview of the research basis at Linköping University
by Christer SVENSSON

10.15–10.30 Coffee

10.30–11.15 User Interface Design AB (UI Design) :

An architecture that supports multimedia and computer supported collaborative work (CSCW)
by Kent LUNDBERG / Manager, UI Technology

11.15–12.00 Innovativ Vision AB (IV) : Image analysis technology presentation of

1) image measurement and image sequence analysis

2) surface inspection and quality control and

3) high speed document processing and image capture".

by Per ROWA / Technical Director

Thursday 10 February

TECHNICAL SEMINAR ON ELECTRONICS

09.30–12.00 Conference room B, bldg 61, 1st floor

09.30–10.15 Saab Scania Combitech :

Development and production of electronic systems at Saab Scania Combitech, Combitech Electronics".

by Jan CARLSON / Manager Marketing & Customer Projects

10.15–10.30 Coffee

10.30–11.15 SiliCon Construction AB (SiCon) : Custom integrated circuits in particle physics applications
by Rolf SUNDBLAD / President

11.15–12.00 Industrial Microelectronics Center (IMC) : Technology and performance of miniaturized electronic systems; Today and in the future
by Hans HENZELL / Vice President

Information : M. Diraison / FI-A / 4585 or J. Kjellman / 8618

Wednesday 9 February

COMPUTING SEMINAR

at 16.00 hrs – CN Auditorium
bldg 31-3005

Experiment in Object-Oriented Design of a Scientific Visualization Tool

by Gregory KOZLOVSKY / CERN-CN

Displaying graphs of functions of one variable together with the associated information is the most basic problem of scientific visualization. We identify the main subtasks of this problem (treating details of graph representation, scaling, labeling, geometry management, and graphical user interface), and propose program structure for a general-purpose one-dimensional function viewer. A prototype C++ implementation of such a viewer, g1tool, is presented, and the lessons learned during this experiment are discussed. One of the goals of the talk is to give concepts of the object-oriented programming specific meaning in an application area which is familiar to many CERN programmers.

Friday 11 February

TECHNICAL PRESENTATION

10.00–16.30 hrs – CN Auditorium
bldg 31/3-005

Tino Häupke and Holger Ölschläger of
Dr. BERND STRUCK (D) will give

a presentation at 10.00 hrs, repeated at 14.00 hrs.

New products in the field of :

- FASTBUS – DSP based Readout Engine and Frontend
Data Compressor
– Optical Crate Interconnect (high speed long distance)
– 32 Channel Leading Edge Discriminator
VXI/VME – DSP based Readout Engine and Frontend
Data Compressor
VME – 40 - 250 Msamples/s Multichannel Flash
ADC-Systems

EDUCATION SERVICES EDUCATIFS

ENSEIGNEMENT GÉNÉRAL

Tél. 5811

Jeudi 3 février

à 13.00 h – Amphithéâtre
Science pour tous
par Rafel CARRERAS

ACADEMIC TRAINING

Tel. 3127

LECTURE SERIES

31 January, 2, 3 & 4 February*

11.00 to 12.00 hrs – Auditorium
Introduction to neural networks
by F. JAMES / CERN-CN

* Please note change of day!

- NIM-Logic and Level shifting functions in VME form factor

CAMAC – Intelligent Crate Controller, 68030 based,
LYNX-OS

Language : English

Information : M. Diraison / FI-A / 4585

POUR / FOR INFORMATION

UNIVERSITE DE GENEVE

Département de physique nucléaire et corpusculaire
24, quai Ernest-Ansermet
1211 Genève 4
Tél. 022 702 6273
Fax 022 781 2192

Wednesday 2 February

PARTICLE PHYSICS SEMINAR

at 17.00 hrs – Stuckelberg Auditorium

Transverse spin-polarisation and its use at LEP

by Jean-Pierre KOUTCHOUK / CERN

In e^+e^- storage rings, the spin-dependent synchrotron radiation causes the circulating beams to become spontaneously polarized. However, non spin-dependent synchrotron radiation enhances the depolarizing effect due to the unavoidable optics imperfections. The latter increases very fast with the beam energy. At LEP spontaneous beam polarization is observed at the highest energy so far. It is shown how polarization could be improved from below 20% to almost 60%. Experimental results on higher-order spin resonances and asymmetric wigglers are presented and are compared with theoretical calculations. They shed some light on the possibility of spontaneous beam polarization at energies higher than 46 GeV. As an important application of polarization the precise calibration of the LEP beam energy is described.

LECTURE SERIES

7, 8, 9, 10 & 11 February

11.00 to 12.00 hrs – Auditorium

Weather Forecast

by P. COURTIER / ECMWF, Reading, U.K.

Weather prediction is performed using the numerical model of the atmosphere evolution. The evolution equations are derived from the Navier Stokes equation for the adiabatic part but they are very much complicated by the change of phase of water, the radiation process and the boundary layer. The technique used operationally is described. Weather prediction is an initial value problem and accurate initial conditions need to be specified. Due to the small number of observations available (10^5) as compared to the dimension of the model state variable (10^7), the problem is largely underdetermined. Techniques of optimal control and inverse problems are used and have been adapted to the large dimension of our problem. The atmosphere is a chaotic system; the implication for weather prediction is discussed. Ensemble prediction is used operationally and the technique for generating initial conditions which lead to a numerical divergence of the subsequent forecasts is described.