

SEMINARS SEMINAIRES

Vous pouvez aussi consulter

For information on these seminars, please see

<http://wwwas.cern.ch/Bulletin/Seminars/current.html>

Monday 29 June

DETECTOR SEMINAR

at 11.00 hrs – ECP Conference room, bld. 13/2-005

TAB Technology for the ALICE TPC Prototype

by J. BAECHLER / CERN-EP &

A. DRAVET / Dassault Electronique

The Tape Automated Bonding (TAB) technology is being used for mounting front end electronics on the ALICE TPC prototype. After a brief introduction to the design of the ALICE TPC prototype, Tape Automated Bonding technology will be described in detail and compared to other available technologies. The current work for ALICE will be used as a case study for performance comparison. Trends in industry for assembling and bonding will be described.

Information: <http://www.cern.ch/CERN/Divisions/EP/Seminars/Welcome.html>

Organiser: Rui Ribeiro /EP

Lundi 29 juin

PRESENTATION TECHNIQUE

at 14.30 hrs *in English* – Council Chamber, bld. 503

à 16.00 h *en français* – Salle du Conseil, bât. 503

Présentation d'EDH-Web

par l'équipe EDH / AS-SU

Le projet EDH-Web est l'évolution naturelle du système de gestion des documents électroniques (Electronic Document Handling system) vers le World-Wide Web. Vous connaissez probablement déjà l'actuel logiciel EDH qui permet de créer ou d'autoriser des documents électroniquement. Avec des collaborations externes de plus en plus importantes, un mécanisme plus simple pour accéder aux documents électroniques était nécessaire, ceci principalement pour la signature électronique.

Un accès aux documents EDH est actuellement disponible : les utilisateurs peuvent visualiser et signer leurs documents à travers un Browser WWW. L'accès au Plan de Travail EDH, tous les écrans d'informations ainsi que la possibilité de rechercher des documents déjà existants sont aussi disponibles. De plus, une Demande de Formation ou de Congé peut être fait directement avec votre browser. La Demande de Matériel paraîtra très prochainement.

Les problèmes de sécurité seront également traités.

Durée : 1 heure

Monday 29 June

CERN EP SEMINAR

at 16.30 hrs – Auditorium, bld. 500*

Measurement of the proton structure function at HERA

by Bernd SURROW / CERN-EP

The proton structure function F_2 and the total virtual photon-proton cross-section have been measured in inelastic neutral current scattering at HERA in the previously unexplored transition region of non-perturbative to perturbative QCD at low Q^2 . To study this kinematic region, a small electromagnetic Beam Pipe Calorimeter (BPC) has been designed, constructed and installed in the ZEUS experiment in 1995. Using the obtained results on F_2 , a detailed phenomenological analysis as well as a QCD analysis have been carried out to investigate the limitations of a non-perturbative as well as a perturbative QCD description. The talk will give an overview of the whole BPC-project at ZEUS.

Organiser : *Fabiola Gianotti / EP Division*

* Tea & coffee will be served at 16.00 hrs.

Tuesday 30 June

LHCC COMPUTING BOARD

Open Session

at 11.00 hrs – Council Chamber, bld. 503

11.00 Project on Videoconference tools: Status Report
(C. Isnard)

Tuesday 30 June

DUALITY WORKSHOP

at 14.00 hrs – TH Conference Room, bld. 4

Oscillating D-string in IIB matrix theory

by G. SENGUPTA / Indian Institute of Technology

We present a class of BPS solutions of IKKT IIB Matrix Theory. They describe D-string configurations with a left-moving plane wave. The quantum effective action for these solutions vanishes confirming their BPS nature. The world-volume theory for these oscillating strings are established to be (8,0) chirally supersymmetric gauge theories in two dimensions. The connection with the static fundamental string is also elucidated.

Tuesday 30 June

TECHNICAL PRESENTATION

at 15.00 hrs – bld. 40/R-A-10

Powder Metallurgy

by J. LIIMATAINEN & M. KUMPULA / Rauma
Materials Technology OY

The firm Rauma Materials Technology OY (RMT) has expressed a great interest in LHC Project and more especially for the manufacture of the end covers of the main dipoles. RMT OY is specialised in powder metallurgy and proposes to use that particular technology for the manufacture of the end covers. A general presentation of the firm will be given and the technique of powder metallurgy will be discussed.

In powder metallurgy, steel pieces are produced from gas atomised spherical powder. Molten metal is forced through special ceramic nozzles into an inert high-speed gas flow that atomises the metal into fine pure metal particles. Then, a very rapid cool down (as fast as 1000 °C/s) and solidification allow an extremely fine grain size and an excellent homogeneity to be obtained.

The metal powder is finally densified thanks to a special compacting process called hot isostatic pressing (HIP). During this HIP operation, the material is simultaneously subjected to high temperature (1100 - 1200 °C) and isostatic pressure (100 - 120 MPa).

The technology is presented as a potential manufacturing alternative against more conventional techniques like casting, forging and welding. The advantages of the technique will be presented and discussed.

Tuesday 30 June

CERN PARTICLE PHYSICS SEMINAR

at 16.30 hrs – Auditorium, bld. 500*

Evidence for Atmospheric Neutrino Oscillation at Super-Kamiokande.

by Edward KEARNS / Boston University

We present an analysis of atmospheric neutrino data from a 33 kiloton-year (535 day) exposure of the Super-Kamiokande detector. The data are inconsistent with expectations based on calculations of the atmospheric neutrino flux; uncertainties in the prediction of the flux, cross sections, and experimental reconstruction are insufficient to explain our observation. Our data are consistent, however, with two-flavor ν_μ - ν_τ oscillations with $\sin^2 2\theta > 0.82$ and Δm^2 between 5×10^{-4} and $6 \times 10^{-3} \text{ eV}^2$ (at 90% C.L.).

Organiser : Jasper Kirkby / EP Division

* Tea & coffee will be served at 16.00 hrs.

Wednesday 1 July

THEORETICAL SEMINAR

at 14.00 hrs – TH Conference Room, bld. 4

Lattice evaluation of non-singlet parton evolution probabilities

by Roberto PETRONZIO / Università di Roma II

I discuss a project for the calculation of hadron structure functions "from first principles" within lattice QCD. In particular, I analyse the non-perturbative evolution of parton densities within a finite volume recursive scheme based on the Schrödinger functional.

Thursday 2 July

LHC PROJECT SEMINAR

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

Current Leads for the Large Hadron Collider using High Temperature Superconducting Material

by A. BALLARINO / CERN-LHC

The Large Hadron Collider will be equipped with about 8000 superconducting magnets. Some 2600 leads will feed currents ranging from 50 to 13000 A. Conventional optimized vapour cooled leads create a heat load into the 4.5 K liquid He bath of 1.1 W/kA. To reduce the heat inleak into the liquid helium, CERN aims to use High Tempera-

ture Superconducting (HTS) material for leads having current ratings between 600 and 13000 A. On the basis of a study, and following encouraging results from a series of tests on different HTS samples, specifications have been written for 13000 A current leads, incorporating a High Temperature Superconducting section, for the main magnets of the LHC. Contracts have been placed with several firms for the supply of prototypes for comparative testing. The leads used for feeding locally the 50 and 100 A dipole orbit correctors will be conventional conduction cooled resistive leads. An optimized lead of variable cross-section has been tested, and an integral design has been initiated. The talk presents the design status of the current leads for the LHC, emphasizing, for the different solutions, the principle of optimization and the choice of the cooling methods.

Thursday 2 July*

CERN PARTICLE PHYSICS SEMINAR

at 16.30 hrs – Auditorium, bld. 500**

Highlights of NEUTRINO 98

by Ulrich STIEGLER / CERN-EP

I will discuss the highlights of the XVIII International Conference on Neutrino Physics and Astrophysics held in Takayama, Japan, June 4-9, 1998. New results are expected in the fields of solar and atmospheric neutrinos, reactor and accelerator oscillation experiments, direct search for neutrino mass, double beta decay, dark matter search, neutrinos in cosmology and astrophysics, and ultra-high-energy neutrinos.

Organiser : Jasper Kirkby / EP Division

* Please note unusual day!

** Tea & coffee will be served at 16.00 hrs.

Friday 3 July

TECHNICAL PRESENTATION

at 14.00 hrs – IT Auditorium, bld. 31/3-004-5

GIOD – The Globally Interconnected Object Databases Project- Status & Outlook

by Julian BUNN / CERN-IT

The GIOD Project on "Globally Interconnected Object Databases", a joint effort of Caltech, CERN and HP Corporation, is addressing the key problems of large scale data storage and access in the context of the WAN-distributed Computing Models foreseen by the LHC experiments. The two-year project, which began in June 1997, aims to model the principal aspects of distributed computing and data-serving centres, including networked object database and hierarchical storage systems which are used to manage large volumes of simulated and reconstructed events.

In this talk I will discuss the project's results to date, ongoing work, and plans for the second year. I will review the results on the scaling and performance of Objectivity/DB and our work with a prototype reconstruction and analysis application for the CMS Tracker and Electromagnetic calorimeter.

The prototype, which is implemented using Objectivity's C++ and Java bindings, incorporates methods that populate a federated database with "raw" data from a large pool of fully simulated CMS jet events. These events are being produced on the 256 CPU HP Exemplar at Caltech. The application builds physics objects from reconstructed tracks and ECAL clusters, including electrons, photons and jets,

and stores them in the database, ready for further analysis. I will describe our experience so far with populating the database with tens of thousands of events, and the plans to work with a sample of order one million events (for Higgs background studies) stored mainly at Caltech, with database partitions at CERN and SDSC, by the end of this year.

Organiser : S. Cannon / IT / 75036

Friday 3 July

CERN HEAVY ION FORUM

at 15.30 hrs – TH Conference Room, bld. 4

Why is field theory at finite chemical potential so difficult?

by Keijo KAJANTIE / CERN-TH

When really hard pressed, lattice Monte Carlo practitioners will give a numerical value for the critical temperature of hot QCD with physical quark masses at zero chemical potential = zero net baryon number density and promise a more reliable one in a few years' time.

When asked about finite chemical potential, they say there is no way to obtain the phase diagram numerically from first principles. The aim of the talk is to clarify why this is the case and to outline a few analytic ideas for dealing with finite chemical potential in hot field theory.

Information: <http://wwwinfo.cern.ch/a/alicedoc/www/chic/>

Organisers: Y. Foka and C. Lourenço

Tuesday 7 July

IT TRAINING TUTORIAL

14.00-16.00 hrs – IT Auditorium, bld. 31/3-004

Introduction to NICE 95

by Alberto PACE / CERN-IT

Do you want to know how NICE 95 can make your job easier? Come and see a demonstration on the 32bit environment for PCs at CERN, based on Windows95.

This presentation will require no previous knowledge neither about PCs nor about NICE. It will emphasize on the services offered to PC users at CERN and on the available repository of applications.

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

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

Tuesday 7 July

CERN PARTICLE PHYSICS SEMINAR

at 16.30 hrs – Auditorium, bld. 500*

Observation of high-energy cosmic gamma rays at 50 GeV to 50 TeV energies – status and prospects

by Joachim ROSE / Leeds University, UK

Imaging Cherenkov experiments are detecting gamma rays from supernova remnants and active galactic nuclei (AGN) at energies between 250 GeV and 10 TeV. Measurements by the Whipple collaboration start to challenge the canonical model of cosmic ray production in shell-type supernova remnants. The measurements of high energy photons from AGN are used to study their relativistic particle jets. AGN detection also sets limits for the intergalactic infra-red photon density since absorption is expected via $\gamma_{TeV} \gamma_{eV} \rightarrow e^+ e^-$. The VERITAS experiment, to be constructed by 2003, will

detect 50 GeV to 50 TeV gamma rays. VERITAS can search for neutralino annihilation, constrain the intergalactic infra-red photon flux predicted by dark matter models, place a limit on the neutrino decay $\nu \rightarrow \nu' \gamma$ and look for gamma ray bursts.

Organiser : Jasper Kirkby / EP Division

* Tea & coffee will be served at 16.00 hrs.

Wednesday 8 July

PS SEMINAR

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

The Route to the Energy Frontier: A New Kind of Two Beam Accelerator

by Ron RUTH / SLAC

During the past several months the CLIC group has pursued the study of a new kind of two beam power source for linear colliders. The energy for RF production is initially stored in a long pulse electron beam which is efficiently accelerated to about 1.2 GeV by a fully-loaded, conventional, low-frequency (~1 GHz) linac. The beam pulse length is twice the length of the high gradient linac, and is compressed using combiner rings to create a sequence of higher peak power drive beams with gaps in between. These drive beams are distributed from the end of the linac against the main beam direction down a common transport line where each drive beam powers a section of the main linac. After a turnaround each high-current, relativistic drive beam is decelerated in low-impedance decelerator structures, and the resulting power is used to accelerate the low-current, high-energy beam in the main linac. The method is very flexible and can be used to accelerate beams for Linear Colliders over the entire frequency and energy range. During this talk, I will review the status of the study, and apply the idea to a range of designs and acceleration frequencies, from a "Higgs factory" at 400 GeV to a 3 TeV Linear collider.

Organiser: Brunto AUTIN / PS Division.

Thursday 9 July

LARGE HADRON COLLIDER COMMITTEE

Open Session

at 09.00 hrs – Council Chamber, bld. 503*

- 09.00-09.10 Status of the LHC project (C. Llewellyn Smith)
- 09.15-10.15 ATLAS Level-1 Trigger Technical Design Report (N. Ellis, E. Petrolo, E. Eisenhandler)
- 10.30-11.00 Coffee break
- 11.00-11.40 ATLAS Pixel Technical Design Report (L. Rossi)
- 11.55-12.15 RD42 Status Report (H. Kagan)

* Please note unusual place

Thursday 9 July

LHC PROJECT SEMINAR

at 14.15 hrs - LHC Auditorium, bld. 30/7th floor

Recent Results from the LHC Insertion Quadrupole Models

by R. OSTOJIC & M. LAMM / LHC Division and FNAL

The present design of the LHC insertions requires several new high gradient quadrupoles including a 70 mm aper-

ture 220 T/m quadrupole operating at 1.9K (MQX), a wide twin aperture 160 T/m quadrupole operating at 4.5 K (MQY) and a 56 mm twin aperture low current quadrupole (MQM). Three 1-metre long 70 mm single aperture quadrupole models have been designed, built and tested (Q1-Q3). The results from the recent protection studies on Q3 have a direct impact on the protection schemes for the MQY and MQM magnets. After a discussion of the program goals and magnet design, we will summarise the results of Q1-Q3 tests, including the training history, quench protection studies and magnetic field measurements.

Thursday 9 July

CERN COLLOQUIUM

at 16.30 hrs – Auditorium, bld. 500*

Latest news on Celestial Gamma-Ray Bursts

by Enrico COSTA / Istituto di Astrofisica Spaziale, CNR, Roma

One year ago the BeppoSAX satellite discovered a faint fading source following a Gamma Ray Burst. Since then BeppoSAX has detected more sources and enabled other ground and satellite-based instruments to study the unexpected properties of these, so far, mysterious objects. Many traditional interpretations of this outstanding phenomenon have been ruled out. Most recent optical measurements have shown that Gamma Ray Bursts are located in dense regions at very high distances. From the combined Gamma and

optical data of the Burst of 14 December 1997 an energy of 3×10^{53} can be derived and this challenges even the hypothesis of two merging neutron stars. To interpret these data we must design new scenarios placed in remote regions of the Universe.

Organiser : Luigi Di Lella / EP Division

* Tea & coffee will be served at 16.00 hrs.

Friday 10 July

IT TRAINING TUTORIAL

10.00-12.00 hrs – IT Auditorium, bld. 31/3-004

Windows 95 basics

by Raul RAMOS POLLAN / CERN-IT

A practical introduction for people novice to the Windows 95 world. I will present the basic elements of the system and show the minimum operational skills in order to start working with it. The talk will provide participants with essential information to understand the use of the desktop, execute applications, view resources and manage files. No previous knowledge is required.

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

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

INFORMATIONS GENERALES GENERAL INFORMATION

ANNUAIRE TÉLÉPHONIQUE CERN

La nouvelle édition de l'annuaire téléphonique CERN 1998 paraîtra dans une semaine.

Cet annuaire ne sera pas distribué systématiquement dans chaque bureau, mais suivant les demandes des DAO, un nombre limité d'exemplaires sera à disposition.

Les personnes n'ayant pas accès aux ordinateurs peuvent prendre contact directement avec leur secrétariat (DAO). Le bureau du courrier et l'imprimerie ne distribueront pas d'annuaires supplémentaires.

Service Téléphone / 72227

CERN PHONE BOOK

The new edition of the CERN Phone Book 1998 will be published next week.

This book will not automatically be distributed to CERN offices, but, as requested by the DAO, only a limited number of copies will be available.

CERN users who do not have computer access and who need a printed directory should contact their divisional secretariat (DAO). Please note that neither the internal mail office nor the print shop will distribute additional copies.

Telephone service / 72227