

COMMUNICATIONS OFFICIELLES

OFFICIAL NEWS

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CONGÉ SPÉCIAL EN CAS DE MALADIE D'UN ENFANT À CHARGE

L'Article R II 4.25 du Règlement du Personnel stipule :

"Un congé spécial rémunéré ou payé de sept jours civils maximum par année est accordé au membre du personnel concerné en cas de maladie grave d'un enfant à charge de moins de dix ans, nécessitant la présence du membre du personnel attestée par un certificat médical."

Il est rappelé aux membres du personnel que le certificat médical doit clairement spécifier que la présence du membre du personnel concerné auprès/(au chevet) de l'enfant est nécessaire.

Division du Personnel
Tél. 74469

SPECIAL LEAVE IN THE EVENT OF ILLNESS OF A DEPENDENT CHILD

Article R II 4.25 of the Staff Regulations stipulates :

"A maximum of seven calendar days of special remunerated or paid leave per year shall be granted to the member of the personnel concerned in the event of serious illness of a dependent child aged less than 10 years, when the need for the presence of the member of personnel is substantiated by medical certificate."

Members of personnel are reminded that the medical certificate should clearly specify that the presence of the member of personnel concerned, at the child's bedside, is necessary.

Personnel Division
Tel. 74469

SEMINARS SEMINAIRES

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

Monday 30 November

DETECTOR SEMINAR

at 11.00 hrs – Conference room, bldg 13/2-005

Limits on Drift Chamber Resolution

by M. ALEKSA / CERN-EP

The ATLAS muon system is designed to measure 1 TeV/c muon momentum with an accuracy of 10%. To achieve this goal the single Monitored Drift Tubes (MDT) resolution has to be better than 80 micron. We describe a detailed study of all the factors limiting the resolution of the MDTs in the ATLAS environment. The dependence of the resolution on the gas gain, gas pressure, threshold level and on the noise level as well as the impact of a high radiation background will be discussed. Measurements and simulations for different drift gases will be presented. This understanding has resulted in front end electronics, which achieves a space resolution of 50 micron.

Information:

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

Organiser: Rui Ribeiro /EP Division

Monday 30 November

ISOLDE EXPERIMENTS COMMITTEE

at 14.00 hrs – Council Chamber, bldg 503

Provisional Agenda for the twenty-fifth meeting

Open session

1. Introductory remarks by the Chairman
2. Progress report by the ISOLDE Technical Group Leader
3. ISOLDE Coordinator's report
4. Studies of the Beta Decay of Kr and Sr nuclei on and near the N=Z line with a Total Absorption Gamma Ray Spectrometer; ISC/98-20/ P103; Ph. Dessagne
5. Semiconductor Spectroscopy with short lived Isotopes; ISC 98-22/P104; M. Deicher
6. Investigations of neutron-rich nuclei at the dripline through their analogue states: The cases of ^{10}Li - ^{10}Be (T=2) and ^{17}C - ^{17}N (T=5/2); ISC 98-23/P105; B. Jonson
7. Self-Diffusion of Carbon and Nitrogen in the Amorphous Ceramics $\text{Si}_{26}\text{C}_{41}\text{N}_{33}$ and related Materials; ISC 98-19 /P102; S. Matics

Closed session

after the Open Session, 6th Floor Conference Room, Main Building.

Monday 30 November

COSMOLOGY MEETING

at 14.00 hrs – TH Conference Room, bldg 4

Origin of the highest-energy cosmic rays

by Arnon DAR / CERN-TH

The origin of non-solar cosmic rays (CR), discovered in 1912, is a major unsolved puzzle in physics. It is widely believed that CR with energies below 3×10^{15} eV (the “knee”) are accelerated in galactic supernova remnants and those above 3×10^{18} eV (the “ankle”), for which a disk origin is unlikely due to their isotropy, in extragalactic sources. However, the CR intensity does not show the “Greisen-Zatsepin-Kuz’min” (GZK) cut-off in intensity at energies above about 4×10^{19} eV which is expected in extragalactic models, due to interactions with the cosmic microwave background radiation. This suggests a local cosmic ray origin. I will show that highly relativistic, narrowly collimated jets that are probably ejected from the formation of compact stellar objects in the disk of our galaxy can accelerate charged particles to the highest CR energies. Such events, seen also as cosmological gamma-ray bursts (GRBs) in other galaxies when their jets happen to point in our direction, can account for all the major observed properties of CR.

Monday 30 November

CERN EP SEMINAR

at 16.30 hrs – Auditorium, bldg 500*

Study of exclusive electroproduction of ρ^0 mesons at low Q^2 using the ZEUS Beam Pipe Calorimeter at HERA

by Teresa MONTEIRO / CERN-EP

Results on the study of the reaction $ep \rightarrow e\rho^0 p$ ($\rho^0 \rightarrow \pi^+ \pi^-$) in the previously unexplored transition region of non-perturbative to perturbative QCD, for photon virtuality Q^2 between 0.25 and 0.85 GeV^2 , are presented. The measurements cover the range in photon-proton center of mass energy (W) between 20 and 90 GeV and $|t| < 0.6 \text{ GeV}^2$ (where t is the squared four-momentum transferred at the proton vertex), and were possible due to the installation, in 1995, of an electromagnetic calorimeter covering positron scattering angles between 17 and 35 mrad in the ZEUS detector, at the HERA collider.

The $\pi^+ \pi^-$ invariant mass distribution in the ρ^0 region has been investigated. The differential cross section of the process and its dependence on W have been studied. Measurements of the spin density matrix elements and of the ratio of longitudinal to transverse cross section have been performed. The ρ^0 production cross section has been determined as a function of W and Q^2 .

Organiser : Fabiola Gianotti / EP Division

* Tea & coffee will be served at 16.00 hrs.

Mardi 1 décembre

PRESENTATION TECHNIQUE

à 14.00 hrs – Auditorium SL, bât. 864, 1er étage

Open Industrial Communication Concept

par H. HUYNH, S. CHILENS / APPLICOM;
F. BOREL, H. MOLLIN / HD Technology

Le produit applicom® Open Industrial Communication Concept permet de gérer simultanément jusqu'à 8 cartes applicom® (bus ISA et PCI), équipées d'un noyau multitâche

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librairie statique: pour les langages tels C, C++, Pascal sous DOS, OS/2, Unix, DLL (Windows 16 et 32 bits), pour les langages tels Visual Basic, C/C++, Delphi, LabView, LabWindows, Windev, serveurs DDE (windows 16 et 32 bits), SuiteLink (Windows NT) pour Factory Suite de Wonderware, serveur OPC multiprotocole (Windows 32 bits).

Langue : français

Information : D. Brahy / LHC, R. Brun / SL Division

Tuesday 1 December

CERN HEAVY ION FORUM

at 14.00 hrs – Conference Room 582/R-008

Event-by-Event Physics in Heavy Ion Collisions

by Thomas TRAINOR / University of Washington, Seattle

With the advent of high-multiplicity final states in Pb-Pb collisions at the SPS several event-by-event (EbyE) analyses have been initiated (NA49, WA98) which search for the onset of QGP formation as manifested by nontrivial dynamical fluctuations associated with vacuum symmetry variations near the QGP phase transition. Similar analyses are being designed for STAR and PHOBOS at RHIC and may be incorporated in ALICE at the LHC.

I will present a general formulation of EbyE analysis based on scale-local topological measures and will relate this comprehensive system to global-variables analysis, symmetries, the Central Limit Theorem and the Grand Canonical Ensemble. Applications to NA49 data and STAR simulations will be included.

Organisers: Yiota Foka and Carlos Lourenço

Info: <http://home.cern.ch/a/alicedoc/www/cluc/>

Wednesday 2 to Friday 4 December

4TH WORKSHOP ON RADIATION HARDENING OF SILICON DETECTORS

Wednesday 2 December

at 09.30 hrs – bldg 40 / S2-A01

- 09.30 Session 1: Overview of ROSE project and requirements of experiments operating in harsh radiation environments
- 14.00 Session 2: Material growth, Analysis and Processing
- 16.00 Session 3: Radiation facilities, NIEL factors and Systematic effects
- 16.50 Session 4: Macroscopic measurements of detectors

Thursday 3 December

at 09.00 hrs – bldg 40 / S2-C01

- 09.00 Session 5: Microscopic Analysis and Device Modelling

4.00 Session 6: Operational considerations for irradiated silicon detectors

Friday 4 December

at 09.00 hrs - 40 / S2-C01

09.00 Session 7: Discussion on the new results and refinement of future plans

14.00 ROSE/RD48 Collaboration meeting

The aim of the ROSE/RD48 project is to improve by silicon crystal engineering the radiation hardness of detectors to be operated in a harsh radiation environment, such as the silicon trackers of the LAC experiments.

About 30 high energy and solid states physics institutes as well as silicon crystal and silicon detector manufacturers are collaborating to this project. This 4th Workshop is dedicated to report on the research progress realized during this year, to point out the practical possible applications and to plan the future months for achieving next year the production of more radiation tolerant silicon wafers to be used for processing large microstrip and pixel particle detectors.

Organizer: F. Lemeilleur / EP

Wednesday 2 December

THEORETICAL SEMINAR

at 14.00 hrs – TH Conference Room, bldg 4

New enhancement mechanism of the transitions of neutrinos crossing the earth

by Serguey T. PETCOV / SISSA & INFN, Trieste and Inst. of Nuclear Research, Sofia, Bulgaria

It is shown that the $\nu_2 \rightarrow \nu_e$ and $\nu_\mu \rightarrow \nu_e$ ($\nu_e \rightarrow \nu_{\mu(\tau)}$) transitions respectively of the solar and atmospheric neutrinos in the Earth in the case of $\nu_e - \nu_{\mu(\tau)}$ mixing in vacuum, are strongly enhanced by a new type of resonance when the neutrinos cross the Earth core. The resonance is operative at small (and large) mixing angles, but differs from the MSW one. It is in many respects similar to the electron paramagnetic resonance taking place in a specific configuration of two magnetic fields. The conditions for existence of the new resonance include, in particular, specific constraints on the neutrino oscillation lengths in the Earth mantle and in the Earth core, thus the resonance is a "neutrino oscillation length resonance". It leads also to enhancement of the $\nu_2 \rightarrow \nu_e$ and $\nu_e \rightarrow \nu_s$ transitions in the case of $\nu_e - \nu_s$ mixing and of the $\bar{\nu}_\mu \rightarrow \bar{\nu}_s$ (or $\nu_\mu - \nu_s$) transitions at small mixing angles. The presence of the neutrino oscillation length resonance in the transitions of solar and atmospheric neutrinos traversing the Earth core has important implications for current and future solar and atmospheric neutrino experiments, and more specifically, for the interpretation of the results of the Super-Kamiokande experiment.

Wednesday 2 December*

CERN COLLOQUIUM

at 16.30 hrs – Auditorium, bldg 500**

The Tree of Life : The Origin of Universal Scaling Laws in Biology from Cells to Whales

by Geoffrey B. WEST / Theoretical Division, Los Alamos National Laboratory

Even though biological systems are the most complex physical systems known in the Universe, they satisfy remarkably

simple scaling laws. Of all scaling laws in science perhaps the most remarkable is that relating metabolic rate (the power needed to sustain life) to size. Over 27 orders of magnitude ranging from the molecular respiratory complex within intracellular mitochondria through unicellular organisms to the largest animals and plants, metabolic rate scales like the 3/4-power of mass. Other biological scaling laws relate how organismal features change with size; these include time-scales (such as lifespan and heart-rate) and sizes (such as radii of tree trunks and aortae). All of these can be expressed as power laws with exponents which are typically simple multiples of 1/4. Their phenomenology will be discussed and a quantitative, unified model presented that can explain their origin, including that of the universal 1/4-power. The model is based on the fundamental observation that all living things, regardless of size, are constrained, and ultimately limited, by the rate at which essential resources that sustain them can be supplied. Assuming that organisms have evolved a space-filling hierarchical fractal-like branching network in which energy dissipated is minimized, the known structural, functional and scaling properties of cardiovascular, respiratory and plant vascular systems can be quantitatively understood. The model makes many testable predictions for these and other systems. A connection to scaling laws in high energy physics will be tentatively explored.

Organiser : Luigi Di Lella / EP Division

* Please note unusual day

** Tea & coffee will be served at 16.00 hrs

Thursday 3 December

THURSDAY SEMINAR

at 14.00 hrs – Room 5/3.004*

Superconformal symmetry and its breakdown in four-dimensional quantum field theories

by J. ERDMENGER / University of Leipzig

I have obtained the superconformal transformation properties of Green functions with an arbitrary number of supercurrent insertions for different $N=1$ supersymmetric models in the superfield formalism. This was achieved by coupling these models to a classical curved superspace background, on which superconformal Ward identities are obtained by combining coordinate reparametrizations and Weyl transformations. Subsequently I have determined the anomalies present in these Ward identities. The supercurrent is a superfield which contains the energy-momentum tensor as well as the supersymmetry and R currents among its components. Therefore these results are expected to have implications both for a potential proof of the Zamolodchikov C theorem in four dimensions as well as for the superconformal current algebra.

* Please note change of place!

Thursday 3 December

LHC PROJECT SEMINAR

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

Risk analysis of the LHC cryogenic system

by Maciej CHOROWSKI and Germana RIDDONE / LHC Division

The objective of the analysis is to identify all risks to personnel or environment resulting from cryogenic failures that may accidentally occur within the cryogenic system of

Large Hadron Collider in any phase of the machine operation that could not be eliminated by design. For this purpose the cryogenic system of LHC is treated as composed of separate helium enclosures. A cryogenic related failure is an accidental event that involves helium or air mass transfer between helium enclosure, insulation or beam vacuum space and environment. Analysing the physical process as a consequence of a failure mode, worst case scenarios are described. Then recommendations concerning lines of preventive and corrective defence are formulated and more detailed studies are proposed.

Thursday 3 December

CAS ACCELERATOR SEMINAR

at 14.15 hrs – Auditorium, bldg 500

The Fourteenth Lecture in the John Adams' Memorial Lecture Series

DAΦNE SETS SAIL

by Caterina BISCARI / LNF-INFN, Frascati

The Φ -factory DAΦNE is beginning its voyage at LNF, Frascati. After less than one year of commissioning it is ready to accommodate the KLOE experiment and start physics in the months to come. The DAΦNE project is an exciting challenge because of the very high luminosity design value ($5 \times 10^{32} \text{ cm}^{-2}\text{sec}^{-1}$) compared to the relatively low energy (510 MeV). Such a luminosity is obtained with the two high current beams stored in twin rings in multibunch configuration, crossing at horizontal angle, with equal horizontal and vertical beam-beam tune shifts. The design is based on the accurate balance between optics parameters, coupling, rf parameters and beam lifetime. The start-up of the collider has been carried out in the single bunch mode on nominal luminosity parameters and luminosity of 10^{30} cm^{-2} has already been exceeded. Shifts dedicated to multibunch operation in single ring mode have proved the reliability of the longitudinal feedback system, essential to achieve the high multibunch currents needed for high luminosity.

**Tea and coffee will be served after the lecture (~16.00 hrs) in the Salle des Pas Perdus*

Thursday 3 December

TECHNICAL SEMINAR

at 15.00 hrs – Council Chamber, bldg 503

Turbo Chillers with Water as Refrigerant

by P. ALBRING / ILK Dresden

Within the bounds of the exhibition "Germany at CERN" there will take place a technical seminar about a new technology in cold water generation. ILK Dresden will present a paper, which was awarded at the last IIR-Conference on natural refrigerants.

After several years of research and development, the first test results of a ready-to-use, compact, hermetic water cooler are available — a water cooler which uses water as refrigerant and is driven by a turbo compressor. This new machine has performances ranging between 500 and 1000 kW, depending on evaporation temperature. Cold water can be provided in a temperature range between 0° and 20° C. The R718 process takes place under vacuum. Proper functioning has been demonstrated using a full-sized experimental unit.

The presentation is followed by a technical discussion.

Organiser: Steffen Grohmann / ST Division

Friday 4 December

ECFA MEETING

at 09.30 hrs – Council Chamber, bldg 503

- 09.30 1. Adoption of the Draft Agenda
- 2. Approval of the Draft Minutes of the Sixty-third Plenary ECFA Meeting
- 09.45 3. Chairman's Report
- 10.30 4. Election of the ECFA Chairman for 1999-2001
Coffee
- 11.15 5. Report from the ICFA Task Force on Networking (D. Williams)
- 12.15 6. Publication Policy of Large Collaborations (G. Mikenberg)
Lunch
- 14.00 7. Update on Muon Collider Prospective Study (A. Blondel)
Coffee
- 15.45 8. CLIC Progress (J.-P. Delahaye)
- 16.45 9. Any Other Business
- 17.00 End of meeting.

Friday 4 December

SL CONTROLS SEMINAR

at 11.00 hrs – SL Amphithéâtre, bldg 864, 1st floor

The SPS-2001 Software Project

by the SPS-2001 team: Pierre CHARRUE, Bernard DENIS, Michel JONKER & Marc VANDEN EYNDEN

From 2001 onwards, the SPS will be used as LHC injector and new requirements have been demanded to fulfill this new mode of operation. The SPS-2001 software project is responsible for reviewing the software that will be used for the operation of the SPS in the LHC era. This presentation will first explain why this project has been launched and what are the new LHC requirements. Then the first concepts and strategy will be presented together with the relationships with other projects like the PS/SL convergence project. Emphasis will be made on the implications for the equipment groups.

This seminar will be the opportunity for the SPS-2001 project team to present their ideas to equipment, controls and operation specialists. The importance to define a coherent interface with accelerator equipment will be stressed and a strategy to enhance the required collaboration between all entities responsible for operating the SPS in the LHC era will be proposed.

Monday 7 December

SYMPOSIUM IN HONOR OF

LAWRENCE W. JONES

14.00-18.00 hrs* – Council Chamber, bldg 503

Speakers: Tofigh AZEMOON, Thomas GAISSER, Kjell JOHNSEN, Pierre LE COULTRE, Byron ROE & Andy SESSLER

** Tea & Coffee will be served at 16.00 hrs; Drinks at 18.00 hrs.*

Tuesday 8 December

PS SEMINAR

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

The Equation of Motion of an Electron

by Andrew M. SESSLER / LBNL

A review will be given of 100 year's of work, by many outstanding physicists, such as Lorentz, Abraham, Sommerfeld, Poincare, Schott, Dirac, Caldirola, on the equation of motion of an electron. It will be shown that for a classical sphere, of size larger than the classical electron radius, there are no problems; that is, there are no runaway solutions, no violations of causality, and no inconsistency with relativity. Remarks will be made upon the non-relativistic quantum mechanics treatment of Moniz and Sharp and upon recent QED work for which a convincing calculation still remains to be done.

Organiser: B. Autin/PS Division

Tuesday 8 December

CERN PARTICLE PHYSICS SEMINAR

at 16.30 hrs – Auditorium, bldg 500*

Long Baseline neutrino oscillation program in the United States.

by Stanley WOJCICKI / Stanford University

The long baseline neutrino oscillation program in the US is focused around a new neutrino beam facility at Fermilab (Neutrinos from Main Injector - NuMI) and a new experiment (Main Injector Neutrino Oscillation Search - MINOS) with a detector in the Soudan mine in northern Minnesota, 735 km away. The beam is a flexible "zoom" design based on two movable parabolic horns, allowing variation of the beam energy from 2 - 25 GeV. The detector is a magnetized iron - scintillator calorimeter with 1" thick, 8m wide octagonal steel plates and 4.1 cm wide scintillator strips. The physics reach of the experiment covers the full Super-Kamiokande suggested region. The seminar will focus on the detector, possible physics measurements, and possible future evolution of the experimental program.

Organiser: Jasper Kirkby / EP Division

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

Wednesday 9 December

TECHNICAL PRESENTATION

at 14.00 hrs – Conference Room 593, room 11

Wigitek ViviGraphics

by E. GOLDSTICK / Unitechnic, France

ViviGraphics is a pure Java visual software development system for building interactive data-driven dynamic graphical displays, such as mimic diagrams. It is particularly useful for rapidly constructing real-time data visualisation front ends to client/server applications with little or no programming. This new tool for supervisory control has been short listed for the Technical Supervision Interface project at CERN. Representatives from the French distributor Unitechnic will present it and answer your questions.

Information: J. Courthial / ST / 78099

Thursday 10 December

ISOLDE SEMINAR

at 15.30 hrs – TH Conference room, bldg 4

New Perspectives on Simple Collective Structures in Nuclei

by John L. WOOD / Georgia Institute of Technology, Atlanta, Georgia

Nuclei exhibit an extraordinarily rich variety of collective structures. This talk will look at the best examples of some long-known types of collectivity, as characterized by modern experimental techniques, and at some new types. The new types considered involve coexisting shapes and it will be shown how they can be identified using electric monopole transitions and how they help us understand "softness" in finite many-body quantum systems

Thursday 10 December

SCIENCE AND SOCIETY COLLOQUIUM

at 16.30 hrs — Auditorium, bldg 500*

Is the World Simple or Complicated ?

by John D. BARROW / University of Sussex, UK

Stop some particle physicists in the street and they will soon be trying to persuade you that the world is altogether simple and symmetrical. But stop a biologist, an economist, or a social scientist and they will tell you quite the opposite : the world is a higgledy-piggledy collection of complexities that owes little to symmetry and displays precious little simplicity. So who is right : is the world really complicated or is it simple ? We shall look at the reasoning that leads to these different conclusions, show why we got different answers to our question, and look at some of the recent developments that have taken place in the study of systems — from sand-piles to music — on the border between order and chaos. We shall also look at some of the connections between our aesthetic sensibilities and the structure of scientific theories.

Organiser: Horst Wachsmuth / EP Division

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

FOR INFORMATION / POUR INFORMATION

LAPP – Laboratoire d'Annecy de physique des Particules
F74941 – Annecy-le-Vieux

Informations : Pascal Perrodo, tél. 04 50 09 16 00

Mercredi 4 décembre

SEMINAIRE

à 14.00 hrs – LAPP Auditorium

Les modèles de masses de neutrinos et leurs prédictions

par Stéphane LAVIGNAC / CPT Saclay et Université de Bonn

Malgré les données récentes de Super-Kamiokande, les propriétés des neutrinos gardent une grande partie de leurs mystères. D'un point de vue théorique, il existe différents mécanismes permettant d'engendrer une masse non nulle pour les neutrinos, qui donnent eux-mêmes lieu à une grande variété de modèles. Les résultats expérimentaux ne permettent pas, pour le moment, de trancher entre les différentes possibilités. Après avoir passé en revue les caractéristiques des mécanismes de génération de masse pour les neutrinos, je présenterai quelques exemples de modèles, en précisant quelles prédictions. On peut en attendre pour les expériences en cours ou projetées.