

- **Groupe d'étude actuariel de la Caisse de pensions**

Un calendrier de discussions sera préparé prochainement sur les principales questions étudiées par ce groupe, à savoir la compensation à verser à la Caisse de pensions liée aux conséquences financières des départs anticipés et de la réduction des effectifs. Le Comité est convenu que les questions de politique sur ce sujet seront soumises pour discussion au CCP.

- **Réparations d'urgence à la suite de l'incendie qui s'est produit sur le site de Prévessin**

En réponse à une question de l'Association du personnel, le Président a déclaré que les conditions de travail du personnel d'entreprises engagé dans ces travaux sont régies par les dispositions juridiques françaises et ne rentrent pas dans le cadre du mandat du CCP.

La prochaine réunion ordinaire du CCP se tiendra le 25 juin 1997.

- **Emergency repairs following the fire on the Prévessin site**

Responding to the Staff Association, the Chairman stated that the working conditions of contract personnel engaged in this work are governed by French legal provisions and are outside the terms of reference of the SCC.

The next ordinary meeting of the SCC is to be held on 25 June 1997.

SEMINARS SEMINAIRES

Pour de plus amples informations, prière de consulter
For full information on these seminars, please see
<http://wwwas.cern.ch/Bulletin/Seminars/current.html>

Monday 16 June

PPE SEMINAR

at 16.30 hrs - Auditorium*

The Palo Verde neutrino oscillation experiment

by Giorgio GRATTA / Stanford University

We are building a long baseline neutrino oscillation experiment utilizing ν_e from the large Palo Verde Nuclear Generating Station near Phoenix, Arizona. Once completed this experiment should reach sensitivities of $\Delta m^2 = 1.5 \times 10^{-3} \text{ eV}^2$ and $\sin^2 2\theta = 0.1$ exploring masses about one order of magnitude smaller than the current limits. Our range of sensitivity will allow us to conclusively ascertain whether the atmospheric neutrino anomaly is caused by ν_e - ν_μ oscillations. We report on the status of the construction describing the main experimental challenges of the project.

* Tea & coffee will be served at 16.00 hrs.

Tuesday 17 June

CERN PARTICLE PHYSICS SEMINAR

at 16.30 hrs - Auditorium*

Alpha Magnetic Spectrometer (AMS) for extraterrestrial study of antimatter, matter and missing matter on the international space station Alpha

by Samuel C.C. TING / CERN and MIT

There have been many discoveries measuring cosmic photons (microwaves, X rays and gamma rays). The AMS experiment is the first magnetic spectrometer designed to study cosmic charged particles, measuring $e^\pm$, n , Be^+ , Be^{10} , anti-He, anti-C, etc. This will enable us to search for dark matter, antimatter and the origin of cosmic rays.

AMS is scheduled to have a ten-day calibration run on the space shuttle Discovery, starting May 29, 1998, followed by a three to five year experiment beginning in 2001 on the space station.

AMS is being constructed in Finland, France, Germany, Italy, the United States, Switzerland, China and Taiwan. A progress report on the construction of AMS will be presented.

*Tea & coffee will be served at 16.00 hrs.

Wednesday 18 June

THEORETICAL SEMINAR

at 14.00 hrs - TH Conference Room

Caustic rings of dark matter

by P. SIKIVIE / University of Florida

It is shown that the infall of collisionless dark matter onto isolated galaxies produces a series of caustic rings in the halo dark matter distribution. The main properties of these caustics are derived. It is found in particular that the density profile of the caustic behaves as the inverse distance to the ring. Bumps in the rotation curve of NGC 3198 are interpreted as due to caustic rings of dark matter.

Wednesday 18 June

SEMINAR FOR CERN GUIDES

at 16.00 hrs - Auditorium

Astrophysics and Neutrinos

by Gert G. HARIGEL / CERN-PPE (retired)

This seminar is primarily intended for CERN guides. The formation of sun-like stars, their life cycle, and their final destiny will be explained in simple terms, appropriate for

the majority of our visitors. An overview of the nuclear reaction chains in our sun will be presented (Standard Solar Model), with special emphasis on the production of neutrinos and their measurement in underground detectors. These detectors are also able to record high-energy cosmic neutrinos. Since many properties of neutrinos are still unknown, a brief description of table-top and nuclear reactor experiments is included, as well as those using beams from particle accelerators. Measurements with a variety of space telescopes complement the knowledge of our universe, previously limited to the visible range of the electromagnetic spectrum.

Thursday 19 June

LIBRARY SCIENCE TALKS

at 14.15 hrs - Auditorium

The new interface to the CERN library data base

by Jean-Yves LE MEUR / CERN-AS

A hands-on demonstration of the new interface to the whole library database. Emphasis will be given to the new feature allowing any user to build his personal virtual library.

A user oriented interface to physics preprint servers

by Carlos LOURENÇO / CERN-PPE

A hands-on presentation of a first version of a tailor made WEB based interface to the preprints kept in the CERN or Los Alamos servers. This interface has already been successfully implemented for the field of high energy heavy ion physics, and can easily be expanded or adapted to other research fields of interest to the HEP community. For the already published papers, a direct link to the published e-journal version is provided (if available).

Status of the digital library at CERN

by Jens VIGEN / CERN-AS

A review of the present situation concerning the availability of the electronic versions of scientific publications at CERN and the electronic reference service. Further projects of the CERN library for the near future will be presented, illustrated by a tailor made solution developed by the Tuovi-team for the LHC-project.

These 3 presentations (of around 15 min each) will be followed by a discussion period in which the users of the CERN preprint server are expected to present their views on the current implementation and their suggestions for future developments.

Thursday 19 June

LHC TECHNICAL SEMINAR

at 16.00 hrs - SL Auditorium, Prévessin bld. 864*

The LHC optics version 5

by Jean-Pierre KOUTCHOUK / CERN-SL

With the better knowledge of the dipole field quality, long-range beam-beam effect, etc., the requirements on the LHC optics become more accurate and more demanding. The motivation for the new version of the LHC optics is to satisfy them by increasing its robustness and flexibility. Analysis of the former versions shows the critical optical sections and the reasons for introducing new quadrupoles and going away from a strict antisymmetry. The increased complexity is balanced by a saving on the number of

quadrupole units. Version 5.0 is now released. We will eventually discuss its evolution in the near future.

** Please note the unusual place.*

Friday 20 June

MEETING ON PARTICLE PHYSICS PHENOMENOLOGY

at 14.00 hrs - TH Conference Room

Semileptonic B decays to excited charmed mesons

by Zoltan LIGETI / Caltech

Exclusive semileptonic B decays into excited charmed mesons are investigated including order $\Lambda / m_{c,b}$ corrections using the heavy quark effective theory. At zero recoil, the $\Lambda / m_{c,b}$ corrections can be written in terms of the leading Isgur-Wise function for these transitions, and known meson mass splittings. Decay spectra for each helicity state of the four lightest excited D mesons are predicted by expanding about zero recoil, with some model dependence. Applications to factorization, B decay sum rules, etc., are presented.

Friday 20 June

CERN HEAVY ION COLLOQUIUM

at 14.30 hrs - Conference Room 40/S2-A01*

Topics of heavy ion physics

by Edward SHURYAK / Stony Brook/MIT

The talk briefly reviews several on-going works.

- (i) Starting with data on radial flow effects observed in AGS/SPS experiments, we describe recent attempts to explain them in hydro framework, with conclusions for EOS. Important issues here are the detailed study of the freeze-out conditions, the separation of chemical and thermal freeze-out, the issue of pion chemical potential, etc.
- (ii) Event-per-event fluctuations of certain observables can be related by standard thermodynamical theory of fluctuations to interesting quantities, potentially providing new information about the freeze-out.
- (iii) Dileptons: new attractive interaction at $T \sim T_c$, looking at chiral partner of χ , a_1 ; charm background at RHIC.
- (iv) Discussion of why the ψ'/ψ ratio is no longer decreasing with centrality, in Pb-Pb collisions.

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

Organisers: Y. Foka and C. Lourenço

** Please note change of place*

Friday 20 June

OPEN PRESENTATION TO CERN COUNCIL DELEGATES

at 15.30 hrs - Auditorium*

Status Report of the Energy Amplifier Concept

by Carlo RUBBIA / CERN-LHC

We report the main results of study performed at CERN over the last three years by few people and with shoe-string funding on the potential impact of new Accelerators technologies in the field of Energy Production from nuclei. Accelerators have been universal tools to study nuclear reactions: why not using them to produce practical, sizeable amounts of nuclear transmutations, for instance in order to:

1. eliminate unwanted long-lived, radioactive Waste from LWRs
2. (eventually to) produce energy in non-critical conditions, similar to the promises of Fusion and
3. as a substitution of Reactors for the neutron activation of short-lived radioactive elements for industrial and medical applications.

We have studied at the CERN-PS both the energy (heat) produced in nuclear cascades in a sub-critical environment ($k=0.90$) and the transmutation of unwanted waste in a small lethargy, transparent medium (lead). These experiments have been driven by conceptual studies and elaborate computer simulations of nuclear cascades and extend the well known HEP concepts of "calorimeter". This work, now essentially completed, has unveiled substantial potentialities for practical uses and it is object of a strong activity of technology transfer to industry, including the proposed realisation, probably in Spain, of a pilot demonstration plant of substantial power.

** Closed-circuit television transmission of the presentation will be available in the Council Chamber*

Monday 23 & Tuesday 24 June

LHC MACHINE ADVISORY COMMITTEE

at 14.00 hrs - LHC Auditorium, bid. 30/7th fl.

Open Session - Provisional Agenda

Monday 23 June

14.00	S. Tazzari	General introduction
14.10	L. Evans	Current status of the LHC project
14.50	P. Lebrun	Update on LHC cryogenics
15.30	L. Tavian	Simplified cryogenic distribution scheme for LHC
16.00	U. Wagner	Progress in cycle design for LHC refrigerators
16.30	A. Poncet	Cryogenics: sectorization

Tuesday 24 June

09.00	J.P. Koutchouk	Status of LHC optics
09.40	F. Schmidt	Dynamic aperture
10.20	C. Wyss	Main dipole magnets
11.35	T. Tortschanoff	Quadrupole magnets I
12.05	J.C. Rifflet	Quadrupole magnets II
14.00		Sub-group sessions
17.00	P. Proudlock	Summary of workshop on dynamic effects

Please note the times indicated are approximate.

Monday 23 June

PPE SEMINAR

at 16.30 hrs - Auditorium*

A measurement of the QCD colour factors and a limit

on the light gluino

by Günther DISSERTORI / CERN-PPE

The large data sample accumulated at LEP 1 allows for precision studies of perturbative QCD, such as tests of the gauge group structure or precise determinations of the strong coupling constant. I will present an ALEPH measurement of the colour factor ratios C_A/C_F and T_F/C_F and the strong coupling constant $\alpha_s(M_Z) = C_{OC}(M_Z)/(2TC)$, which has been performed by fitting theoretical predictions simultaneously to the measured differential two-jet rate and angular distributions in four-jet events. The result is found to be in excellent agreement with QCD, $C_A/C_F = 2.20 \pm 0.09 (stat) \pm 0.13 (syst)$, $T_F/C_F = 0.29 \pm 0.05 (stat) \pm 0.06 (syst)$. Fixing C_A/C_F and T_F/C_F to the QCD values permits a determination of $\alpha_s(M_Z)$ and n_f , the number of active flavours. With this measurement the existence of a gluino with mass below $6.3 \text{ GeV}/c^2$ is excluded at 95% confidence level.

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

Wednesday 25 June

COMPUTING SEMINAR

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

Real time in Mathematica using MathLink

by Chikara MIYAJI / University of Tsukuba

MathLink is the two-way communication protocol between the interface and the kernel of Mathematica. A comprehensive approach of MathLink is the subject of a book written by the speaker. The main features of MathLink will be outlined with an emphasis on interactive and real time graphics. It will be shown how an event can be detected and sent to the kernel as an EventExpression. This mechanism enables one to write Graphical User Interface(GUI) in Mathematica and to fit any experimental environment where real time interaction is needed.

Organiser : G.Folger / IT

Thursday 26 June

LHC TECHNICAL SEMINAR

at 16.00 hrs - LHC Auditorium, bid. 30/7th fl.

The assembly of the LHC dipole cold masses

by Frédéric SA VARY / CERN-LHC

In order to improve our knowledge on the assembly work of the LHC dipole cold masses, a "Magnet Assembly Facility" has been installed at CERN in building 181. It is now equipped with all the necessary tools to allow the manufacture of sub-assemblies and to allow the final assembly of the dipole cold masses, i.e. to fit the magnet components in the outer envelope constituted by the shrinking cylinder and the end covers. The main objectives of the MAF team are first to establish the assembly procedures of the cold masses and secondly to build up a quality assurance program-me that will be finally applied to the future mass production. In this seminar, we will sum

up the work done so far in building 181 and we will present the foundations of the quality assurance programme.

FOR INFORMATION

Tuesday 1 to Friday 4 July

2ND EDOARDO AMALDI CONFERENCE ON
at 09.00 hrs - Auditorium

Gravitational Waves

From 1-4 July 1997, CERN will play host to the 2nd Edoardo Amaldi Conference on Gravitational Waves, which will bring together scientists from all over the world involved in the various aspects of today's gravitational-wave research. The Conference aims to provide a forum for discussing the

recent developments in this field and to promote coordinated efforts towards an international network of gravitational-wave detectors.

The Conference will consist of three and a half days of plenary sessions at which invited talks and contributed papers will be presented.

Topics covered will include: interferometers and resonant-mass detectors; experiments in space; astrophysical sources; stochastic backgrounds; data analysis; and other aspects of today's gravitational-wave research. Mornings will be devoted to experiments and afternoons will include sessions on contributed papers, as well as "topical discussion sessions" on subjects such as discrete sources, sources and spectra of stochastic backgrounds, data analysis and instrumentation.

Up-to-date information on all aspects of the Conference can be found on the Web:

<http://www.cern.ch/Physics/Conferences/C1997/GravitationalWave/>

EDUCATION SERVICES EDUCATIFS



Information sur les cours, dates et places disponibles sur WWW:
Information about the courses, dates and places available on WWW :
<http://www.cern.ch/Training/>

ACADEMIC TRAINING ENSEIGNEMENT ACADEMIC

F. Benz Secretariat 73127

Jeudi 19 juin

SEMINAIRE

à 11.00 h - Amphithéâtre des Services Educatifs, bât. 593

1962-1997: 35 ans d'Enseignement Technique au CERN

par Hervé ALLEYN / Responsable de
l'Enseignement Technique jusqu'au 30 avril dernier

La formation, qu'elle soit initiale ou permanente, constitue actuellement un des thèmes majeurs de toutes les politiques et aucune entreprise, aucune institution ne peut espérer atteindre ses objectifs sans plan de formation cohérent. Pourtant, lorsqu'en 1962 le Conseil du CERN donne son feu vert à la création d'un programme d'Enseignement Technique, il fait alors oeuvre de pionnier et, comme l'avenir devait le montrer, de visionnaire.

Objectif de cette présentation :

- mettre en évidence l'évolution de ce programme tout au long des grandes étapes politiques, culturelles, structurelles et pédagogiques qui ont jalonné la vie de notre société en général et celle du CERN en particulier,
- montrer comment et pourquoi un programme généraliste et scolaire d'une dizaine de cours réunissant en amphithéâtre deux ou trois cents participants s'est transformé pour offrir maintenant des formations très ciblées sur plus de 70 sujets différents et pour plus d'un millier de participants chaque année, touchant toutes les catégories professionnelles,
- dégager des lignes de réflexion pour l'évolution possible en fonction des objectifs et des nouvelles techniques pédagogiques.

N.B. Ce séminaire est ouvert sans inscription à toute personne intéressée.

LECTURE SERIES

16, 17, 18, 19 & 20 June

11.00 to 12.00 hrs - Auditorium

Cryogenics in high-energy physics laboratories

by Jörg SCHMID / CERN-LHC

The course will present applications of cryogenics in HEP laboratories. It aims at showing a bit of the physics background (thermodynamics!) of cryogenics and cryogenic tasks. It will be structured as follows :

- Ideal gas cryogenics (thermodynamic principles; cryopumps as entropy pumps)
- Helium-I cryogenics (use of liquid helium above the Lambda Point)
- Superfluid cryogenics (superconductivity; superfluidity of ⁴He and ³He)
- Cryogenic engineering in particle physics laboratories (including dekaKelvin cryogenics: cryopumping, purification, "calorimeters" for particle physics, etc.)
- Millikelvin cryogenics (dilution refrigerators, magnetic refrigeration, polarised targets).