

de l'année en cours. Un paragraphe précisant l'interprétation de cette qualification ("travail entièrement satisfaisant") figurera dans la circulaire.

La prochaine réunion ordinaire du CCP se tiendra le 3 décembre 1997.

SEMINARS SEMINAIRES

Monday 24 November

COSMOLOGY MEETING

at 14.00 hrs – TH Conference Room, bldg 4

Physics of reheating

by Igor TKACHEV / Ohio State University

Stimulated decay of coherently oscillating scalar field will be considered. Discussions range from quantum to classical transition to non-linear dynamics of re-scattering and turbulence. Physical applications include detailed study of the inflaton decay, non-thermal phase transitions, formation of topological defects and generation of relic gravitational radiation in the early universe.

Monday 24 November

SPECIAL CERN PARTICLE PHYSICS SEMINAR

at 16.30 hrs – Auditorium*, bld. 500

The Future of Nuclear Weapons Policy in the US

by Wolfgang K.H. PANOFSKY / SLAC and Stanford University, California

With the end of the cold war some changes in nuclear weapons policy have been made but much more dramatic initiatives are needed to use the opportunities for drastically reducing the nuclear danger. A process of progressive constraints on nuclear weapons numbers, doctrine and readiness will be discussed and the preconditions for potential paths towards universal prohibition of nuclear weapons will be addressed. The shift in the nuclear danger from confrontation among the declared nuclear weapons states to concerns about proliferation, inadvertent use or the danger of nuclear terrorism will be addressed.

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

Tuesday 25 November

SPECIAL COSMOLOGY SEMINAR

at 11.00 hrs – TH Conference Room, bldg 4
(note unusual time)

String cosmology with Ramond-Ramond fields

by Jim LIDSEY / University of Sussex

We investigate the symmetry properties of a dual action derived by compactifying the effective action of the type IIB superstring on an isotropic six-torus. We show how the Neveu/Schwarz - Neveu/Schwarz and Ramond-Ramond three-form field strengths are dual to the gradients of two coupled pseudo-scalar axion fields. The dual action is also invariant under a discrete Z_2 reflection symmetry which leads to a further $SL(2,R)$ symmetry. The continuous and discrete symmetries are employed to generate four- dimen-

The next ordinary meeting of the SCC will be held on 3 December 1997.

Vous pouvez aussi consulter

For information on these seminars, please see

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

sional cosmological solutions with non-trivial Neveu/Schwarz - Neveu/Schwarz and Ramond-Ramond form fields from the dilaton-moduli-vacuum solutions. We investigate the generation of curvature and isocurvature (dilaton, moduli and axion) perturbations in models of this type. Possible phenomenological constraints arising from the overproduction of primordial black holes will be briefly discussed.

Tuesday 25 November

TUESDAY WORKSHOP

at 14.00 hrs – TH Conference Room, bldg 4

D-effects in string theory

by Boris PIOLINE / CERN

Tuesday 25 November

IT TRAINING TUTORIAL

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

Introduction to Mailing Lists and Listbox

by German FERNANDEZ / CERN-IT

Sending e-mail to a group of people via a mailing list is of the first importance in the daily communication in an organisation.

There are basically two kinds of mailing lists: those in your private addressbook and those which are centrally managed.

Private lists are enough for a small informal group of users. Large or official lists may more appropriately be handled by the listbox service. This can be especially important as people are migrating from one mail service to another one. This tutorial will cover the main topics in mailing list creation, usage and administration, as well as some special utilities that have been implemented in order to ease their management:

- automatic update of preferred e-mail address from the CERN database
- automatic generation of lists using the CERN database
- MOWGLI, a web interface for mailing list management

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

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

Tuesday 25 November

CERN PARTICLE PHYSICS SEMINAR

at 16.30 hrs – Auditorium*, bld. 500

History of SLAC

by Wolfgang K.H. PANOFSKY / SLAC and Stanford University, California

The talk will give the early history of the evolution of electron linac technology at Stanford, then cover the design process, the construction proposal for SLAC and the concomitant politics of the construction process and the accelerator commissioning, including unforeseen surprises. The talk will then briefly outline the evolution of accelerator and collider complex. Some general conclusions will be drawn on the innovative nature inherent in SLAC's early development and on the reasons for the longevity of the SLAC complex.

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

Mercredi 26 novembre

SEMINAIRE TECHNIQUE LHC

à 14.00 h – Amphithéâtre LHC, bât. 30/7ème ét.

L'état d'avancement du projet LHC

par Lyndon EVANS / Chef du projet LHC

Ce séminaire sera donné en français et s'adresse à un large public sans connaissances spécifiques.

Thursday 27 November

THURSDAY SEMINAR

at 14.00 hrs – TH Conference Room, bldg 4

Supersymmetric Q-balls as dark matter

by Mikhail SHAPOSHNIKOV / CERN

Supersymmetric extensions of the standard model generically contain stable non-topological solitons, Q-balls, which carry baryon or lepton number. I will discuss unusual properties of SUSY Q-balls and argue that they can be copiously produced in the early universe, can survive until the present time, and can contribute to dark matter.

Jeudi 27 Novembre

PRESENTATION TECHNIQUE

à 14h00 – Salle 36-1-013

Supervision et interface homme-machine

par L. HAHN, V. CHÂTELAIN et A. SCHILLACI / Siemens Renens

Le SIMATIC WinCC est un système ouvert de conduite et de supervision de processus tournant sur Windows 95 et Windows NT. Les pupitres opérateur permettent une visualisation et un contrôle local des processus. Pour illustrer le sujet, R. Gavaggio (LHC/VAC) présentera une application CERN de contrôle et supervision de 2 bancs de tests de chambres à vide avec WinCC.

Langue : Français

Information : D. Brahy / LHC-IAS / 78648

Thursday 27 November

AC SEMINAR

at 16.00 hrs - LHC Auditorium, Bld. 30/7th floor

Niobium sputter-coated copper resonators

by Sergio CALATRONI / CERN-EST

Niobium sputter-coated copper resonators are successfully employed in operating accelerators, the most outstanding example being LEP2. In this review recent progress in the understanding of the basic principles governing their behaviour will be presented, with a special emphasis on the

effect of film impurities and of trapped magnetic flux on the surface impedance. It will be shown that no fundamental limitations prevent the use of this technology for future high-field, high-Q accelerating cavities.

The possible next steps in their R&D will be outlined.

Thursday 27 November

CERN COLLOQUIUM

at 16.30 hrs – Auditorium*, bld. 500

Wide band detectors for gravitational waves

by Francesco FIDECARO / Università e Sezione INFN di Pisa

Gravitational wave interferometric detectors operating between 10 Hz and 10 kHz are currently being built. According to current astrophysical knowledge their sensitivity – of the order of 10^{-23} m/ $\sqrt{\text{Hz}}$ at 100 Hz – should allow them to detect a few events per year. The expected signals include binary neutron star inspiralling and coalescence, and stellar collapse. Less predictable sources are fast rotating neutron stars (pulsars). Stochastic background of cosmological and astrophysical origin will also be searched for. Operation principles and main sources of noise are described. Main ideas in the critical field of data analysis are illustrated. Finally an outline of the perspectives of the study of gravitational waves is given.

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

Friday 28 November

IT TRAINING TUTORIAL

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

A Guided Tour of the Software Development Tools Service

by Arash KHODABANDEH / CERN-ECP

What do you use to help you analyse, design, prototype, code, debug, measure and document your software development?

In the IPT Group we actively help software projects in CERN experiments to identify, evaluate, purchase and use industrial software development tools.

Taking the OPAL Trigger Upgrade project as a case study, we will show both the benefits of using Software Development Tools and how to combine them to build the Software Development Environment that best addresses our problems. The presentation will continue with a tour of available tools that can be used, through the IPT Software Development Tools Service, as components for various phases and activities of the life cycle. Online demonstrations will be used for most of the tools.

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

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

Friday 28 November

MEETING ON PARTICLE PHYSICS PHENOMENOLOGY

at 14.00 hrs – TH Conference Room, bldg 4

Higher-order QCD corrections to matching equations and SM Higgs decays into hadrons

by Konstantin CHETYRKIN / University of Karlsruhe

We present recent analytical calculations of higher order α_s corrections to the Higgs decay rate to hadrons as well as to the QCD matching equations. The new results include:

- three-loop corrections to the QCD matching conditions

for α_s and the light quark masses;

- all-order low-energy theorems which express the effective (top-induced) Higgs coupling to gluons and light quarks in terms of the matching functions for the coupling constant and the light quark mass respectively;
- the next-to-leading correction of order α_s^4 to the decay rate $\Gamma(H \rightarrow \text{gluons})$;
- the complete $O(\alpha_s^3)$ correction to $\Gamma(H \rightarrow b\bar{b})$.

We also discuss applications of three-loop matching and four-loop running for the connection between $\alpha_s(M_Z)$ and $\alpha_s(M_T)$.

Friday 28 November

SL SEMINAR

at 16.00 hrs – SL Auditorium, Prévessin, bldg. 864

Achieving new goals and results using a project approach

by B. DENIS and M. VANDEN EYNDEN / CERN-SL

Projects and project management is deeply rooted in CERN's culture.

Project practices are however quite informal. During the last years, people involved in various controls projects have tried to improve their approach to project management. Improving the project management practices does not mean adopting tools to schedule rigidly the activities of a project. In the case of the latter projects, efforts have been made to define clearly the objectives, the scope and the responsibilities of the projects. Methods and tools have been used to support this approach but also to provide full visibility to the section leaders, the group leaders and any person having a stake in the project.

The presentation will expose the latest approach used to launch, plan, implement and control projects. It will demonstrate that the same approach should be used for projects involving work contracted or outsourced to industry. The benefits of the approach and the impressions of the persons directly or indirectly involved in the projects will also be presented.

The second part of the presentation will suggest ways to improve project culture in the SL division. Concrete solutions leading to more project orientation and more project-based management will be introduced.

* Please note unusual day!

** Coffee and tea will be served at 15:30 in front of the auditorium

Monday 1 December

DETECTOR SEMINAR

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

Hybrid PhotoDiodes as Cherenkov light detectors

by Malcolm JOHN / Imperial College

Cherenkov light detection in LHC experiments will present challenging problems. Single photons have to be detected, their positions measured and all this within the 25ns LHC bunch-crossing period.

The Hybrid PhotoDiode (HPD), which uses silicon detectors within a vacuum phototube, presents a promising solution. Tests have been carried out this summer, in a charged particle beam, to investigate the performance of commer-

cially available HPDs in a prototype of a Ring-Imaging Cherenkov counter for the proposed LHC-B experiment.

I shall present results from the beam tests, focusing on the properties of the HPDs for this specific application, viz. Single photon sensitivity, stability and uniformity, signal/noise, spatial precision, etc.

Consequences of these results for the performance of the LHC-B RICH counters will be discussed.

Monday 1 December

PPE SEMINAR

at 16.30 hrs – Auditorium*, bldg 500

Evidence for exotic mesons from BNL-E852

by Suh-Urk CHUNG / Brookhaven National Laboratory

The BNL-E852 Collaboration has studied the $\eta\pi^-$ system in the reaction $\pi^-p \rightarrow \eta\pi^-p$ at 18 GeV/c. The $a_2(1320)$ meson is observed very strongly in the $\eta\pi^-$ system, but the angular distribution in the Gottfried-Jackson frame shows an asymmetry which varies rapidly as a function of the $\eta\pi^-$ mass. The detailed analysis of the $\eta\pi^-$ system gives strong evidence for an exotic $J^{PC} = 1^{-+}$ state of mass 1370 MeV and width 385 MeV.

In addition, an analysis of the reaction $\pi^-p \rightarrow \pi^+\pi^-\pi^-p$ at 18 GeV/c shows evidence for another exotic meson with $J^{PC} = 1^{-+}$ of mass 1600 GeV and width 170 MeV.

A discussion will be made about the significance of these exotic mesons in the context of the QCD.

*Tea & coffee will be served at 16.00 hrs.

Tuesday 2 December

TECHNICAL PRESENTATION

at 10.00 hrs – IT Auditorium, bldg 31/3-004-5

Bridging the gap between science and industry.

by Dave Sloggett, Deputy Chairman Anite Systems UK.

Organiser : S. Cannon / IT / 75036

Tuesday 2 December

IT TRAINING TUTORIAL

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

Auxiliary Mail Tools

by Arnaud TADDEI / CERN-IT

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

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

Wednesday 3 December

PS SEMINAR

at 11.00 hrs – PS Auditorium, bldg. 6/2-004)

Beams in the ps complex in 1998

by Roland GAROBY and Karlheinz SCHINDL

Organiser: B. Autin/PS

Jeudi 4 decembre

PRÉSENTATION TECHNIQUE

09.00 - 17.00 hrs – bât. 73/2-027

Câbles coaxiaux et Connecteurs

par M. ORTINO/RADIALL (FR)

Langue : français, anglais

Information : L. Abel / SPL-PS / 79561

Thursday 4 December

SCIENCE AND SOCIETY

at 16.30 hrs - Auditorium*, bldg 500

Global Warming - Blame the Sun !

by Nigel CALDER, Science Writer, Former Editor of the New Scientist, Crawley, England

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

Friday 5 December

ECFA (EUROPEAN COMMITTEE FOR FUTURE ACCELERATORS)

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-first Plenary ECFA Meeting
- 09.35 3. Chairman's Report
- 10.05 4. CERN Matters
(C.H. Llewellyn Smith)
- 10.35 *Coffee*
- 11.00 5. Status of the LHC Accelerator
(L.R. Evans)
- 12.00 6. Report on the ECFA/CERN Network for Explaining HEP to Society
(F. Close)
- 12.30 *Lunch*
- 14.00 7. HEPCCC: European Networking
(F. Ruggieri)
- 14.45 8. Report from HEPAP
(M. Witherell)
- 15.45 *Coffee*
- 16.15 9. Overview of Neutrino Oscillation Experiments
(L. Foà)
- 17.00 10. ECFA Meetings in 1998
11. Any Other Business
- 17.15 End of meeting

Friday 5 December

IT TRAINING TUTORIAL

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

MOWGLI: Managing Mailing Lists with the Web

by German FERNANDEZ / CERN-IT

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

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

POUR INFORMATION / FOR INFORMATION

THE FALL'97 IT TRAINING PROGRAMME

Please check the Bulletin every week for detailed information about the programme of tutorials scheduled for the coming weeks. Also, you can always access our WWW page for up to date information:

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

Miguel Marquina and Raul Ramos / IT User Support

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Wednesday 26 November

SEMINAR ON PARTICLE PHYSICS

at 17.00 hrs – Stückelberg Auditorium

Soft and Diffractive Phenomena

by Ralph A. EICHLER/ETH-Zurich

Recent results on hard diffraction at HERA and the Tevatron are presented. The diffractive structure function is measured for the first time and an interpretation in terms of parton densities in the diffractively exchanged object is given. Charged particle multiplicities in diffraction and differences in multiplicity in quark and gluon jets measured at LEP are discussed. Leading particle effects show some unexplained features.