

SEMINARS SEMINAIRES

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For information on these seminars, please see

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

Monday 3 November

COSMOLOGY MEETING

at 14.00 hrs – TH Conference Room

Accelerator constraints on neutralino dark matter

by John ELLIS / CERN

The present accelerator limits on possible supersymmetric dark matter are discussed, with particular emphasis on those inferred from experiments at LEP. In combination with conventional theoretical assumptions, these suggest that any supersymmetric cold dark matter candidate should weigh more than about 40 GeV. Prospects for future LEP and LHC searches are also reviewed.

Tuesday 4 November

CERN PARTICLE PHYSICS SEMINAR

at 16.30 hrs – Auditorium*

Results from the Neutrino Oscillation Search with CHORUS

by Jürgen BRUNNER / CERN-PPE

The aim of the CHORUS experiment is to search for neutrino oscillations in the $\nu_\mu - \nu_\tau$ sector by detecting the reaction $\nu_\tau N \rightarrow \tau \text{barr} X$ in a background of ν_μ induced events. On 10 November 1997 data taking will stop after 4 years of successful running. Results will be presented from an analysis of the first 2 years of data and an outlook for the full analysis will be given.

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

Mercredi 5 novembre

PRÉSENTATION TECHNIQUE "DÉMONSTRATION"

09.30-17.00 h – bât. 13/3-005

Les technologies dans le domaine de la mesure sans contact

par C. MOREAU / COTEC Applications (CH)

La Société COTEC Applications vous propose une démonstration de leurs différentes technologies dans le domaine de la **mesure sans contact**.

Matériel en démonstration

MicroVu: station de contrôle tridimensionnelle
sans contact par vision

AltiSurf: station de microtopographie

Langues : français, anglais

Information : L. Abel / SPL-PS/79561

Wednesday 5 November

LHCC ELECTRONICS BOARD SEMINAR

at 11.00 hrs – Auditorium

Highlights of the LEB London Workshop on LHC electronics

by Peter SHARP / Rutherford Appleton Lab.,
Nick ELLIS / CERN-PPE & Mike LETHEREN /
CERN-ECP

The aim of the LEB workshop was to review the status of the development of electronics for the LHC experiments with emphasis on systems issues. In the plenary sessions the requirements of each LHC experiment were addressed and experts from outside the HEP community gave overview talks on radiation-hard electronics, testing of electronic systems, quality management, packaging and interconnect technologies, maintenance and reliability, and optical link technology. There were two series of parallel sessions, one of which was devoted to rad-hard electronics, front-end electronics and optoelectronics, while the other session dealt with the electronics for the trigger, the DAQ system and the muon detectors.

The speakers will summarize the current status and outstanding challenges for rad-hard and rad-tolerant electronics, optical readout links, trigger and data-acquisition electronics, and readout electronics for muon detectors, as well as issues related to detector control. A summary of the plenary discussion sessions will be given and tentative recommendations will be given on the future development programme.

Wednesday 5 November

THEORETICAL SEMINAR

at 14.00 hrs* – TH Conference Room

Black holes and quantum coherence

by Daniele AMATI / SISSA, Trieste

Recently discovered connections between D-branes and black holes show how the information puzzle is solved in string theories. Well-defined quantum states do not give rise to black holes. It is the classical limit that provides – on the same token – the loss of quantum coherence, the emergence of a space-time description with causal properties, and thus the formation of a black hole.

** Please note that this seminar will commence AT 2 P.M. SHARP!!*

Wednesday 5 November

COMPUTING SEMINAR

at 16.00 hrs – IT Auditorium, bld. 31/3-005

Internet-based Design Project Coordination

by Charles J. PETRIE / Center for Design Research,
Stanford University

Current project management techniques are extremely limited in their capabilities to respond to changing conditions, especially when the participants are distributed spatially, temporally, and among disparate disciplines. Finally, there is virtually no computational support at all for distributed design. We describe the opportunities and research problems for this area.

We also describe the agent-based approach of and progress made in the Stanford CDR ProcessLink project:

<http://cdr.stanford.edu/ProcessLink>

This includes development of the JATLite agent infrastructure, use of the Redux agent with other generic agents, and combining inputs from specialized software, Java applets, and HTML authoring tools.

Organiser : G.Folger / IT

Thursday 6 November

TECHNICAL PRESENTATION

at 11.00 hrs – LHC Auditorium, bld. 30-7-018

Polyimide films by Du Pont de Nemours

by Jim OCHSNER, Development Manager of KAPTON® at the Du Pont Plant at Bayport, TX, USA and G. Forster, Product Manager of HT films for Europe and Middle East in Bad-Homburg, Germany

Du Pont de Nemours will present as already done several times over the last 10 years, its latest developments in the field of polyimide films (KAPTON®)

There will be a general presentation of KAPTON®, existing commercial grades and recent developments, which are thermoplastic LCI structure, formable, heatsealable, antistatic, electrically conductive, thermally conductive and high modulus KAPTON® as well as development trends.

Thursday 6 November

THURSDAY SEMINAR

at 14.00 hrs – TH Conference Room

Quantum vs. Classical effects in high-temperature electroweak baryogenesis

by E. IANCU / Service de Physique Théorique, Saclay

I discuss a recent controversy on the rate of anomalous baryon number violation in the high temperature phase of the standard model. According to the old common wisdom, this quantity is computable in *classical* Yang-Mills Higgs theory, with a result $\Gamma = O(\alpha_w^4 T^4)$. However, there are new arguments suggesting that thermal damping effects — which are not correctly described by the classical theory — may cause this rate to be actually smaller: $\Gamma = O(\alpha_w^4 T^4)$. I show that the relevant thermal effects can be encoded in an effective action for the soft, quasi-classical, fields. I discuss the usefulness of this effective theory for realistic lattice calculations of the baryon violation rate.

Thursday 6 November

SL SEMINAR

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

A CERN neutrino beam toward Gran Sasso

by Eberhard WEISSE / CERN-SL

An important effort is at present under way to prepare a new generation of neutrino experiments to clarify defini-

tively the intriguing puzzle of neutrino oscillations. One attractive possibility to increase the sensitivity of accelerator neutrino experiments is to extend the base line, i.e. the distance between source and detector, to far beyond the boundaries of the laboratory.

At CERN a study of a facility is under way to send a neutrino beam from the SPS toward the Gran Sasso laboratory in Italy, 732 km away from CERN, where the ICARUS detector is under construction and other ones are studied.

This new facility will be designed to be suited also for short base line experiments like TOSCA, a possible follow-up of CHORUS and NOMAD, taking data at the present SPS West Area beam.

After a brief introduction to neutrino oscillations and their manifestations, the talk will give a status of the design and of the expected performance of this new facility.

** Coffee and tea will be served at 15.30 in front of the auditorium*

Thursday 6 November

SCIENCE AND SOCIETY

at 16.30 hrs – Auditorium

Nonsense, Nonscience, and Science – from Creationism to Aliens

by Lawrence KRAUSS / Ambrose Swasey Professor of Physics, Case Western Reserve University, Michigan

In 1996, U.S. presidential candidate Patrick Buchanan announced on national television that he was not descended from monkeys, and moreover, he thought children should not be taught this. Yet, not a single reporter questioned him on this remarkable statement, in spite of detailed questions on his economic policies. For some reason, the media is hesitant, when referring to scientific issues, to indicate that in certain issues there is no debate, namely there is simply a right answer and a wrong answer. This is so in spite of the fact that science provides, perhaps more than anything else, a set of techniques for distinguishing nonsense. I will talk about the historical context of this issue, the dangers it imposes, and provide examples from the press, as well as clips from television and movies, of mixing up science and fiction, as well as describe ways to avoid this.

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

Friday 7 November

MEETING ON PARTICLE PHYSICS PHENOMENOLOGY

at 14.00 hrs – TH Conference Room

In search of quark-gluon plasma (QGP): strangeness, charm, entropy-multiplicity

by Johann RAFELSKI / University of Arizona

Flavour and entropy (hadron multiplicity) production from dense matter formed in high-energy nuclear collisions can be used as a diagnostic tool of deconfinement. Both are “good” observables with production excess preserved by “reasonable” evolution scenarios of the dense matter fireball. Results from SPS experiments suggest a similar reaction mechanism for S-S, S-W/Pb and Pb-Pb, and in particular show (where data is available) expected particle multiplicity excess and approach to strangeness chemical equilibrium. We will attempt a consistent interpretation of all results, seeking also to understand the differences in the J/Psi suppression data seen between high E_T Pb-Pb and lighter systems / low E_T Pb-Pb.

Friday* 7 November

CERN COLLOQUIUM

at 16.30 hrs – Auditorium**

The Age problem : Is our Galaxy older than the Universe?

by Lawrence M. KRAUSS / Ambrose Swasey Professor of Physics, Case Western Reserve University, Michigan

For almost 70 years, since Hubble's discovery that the Universe is expanding, there has been a constant tension between the age of the Universe, as determined from the Hubble expansion, and the age as determined from stellar evolution estimates of our galaxy. I will describe the issues and the current status of this controversy, including new results stemming from the Hipparcos satellite measuring parallaxes of nearby stars which suggest that for the first time in recent memory the lower limit on the age of the universe based on globular cluster ages may be in accord with the upper limit obtained from the Hubble constant, even for a flat, matter dominated universe. I will briefly outline the cosmological implications of these results.

* Please note unusual day.

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

Monday 10 November

CERN HEAVY ION FORUM

at 14.30 hrs – ECP Conference Room, bld. 13/2-005

Interactions of hadrons and nuclei at LHC energies

by Alexei Kaidalov / ITEP

A unified approach to hadron-hadron, hadron-nucleus and nucleus-nucleus interactions at high energies will be given. It is based on the Gribov reggeon diagrams technique, the AGK-cutting rules and the string model. A space-time picture of the interactions will be discussed and the importance of a new large scale for the production of heavy-quark states on nuclei will be demonstrated. A relation between the interactions of hadrons and nuclei at LHC energies and small-x physics at HERA will be discussed and predictions for shadowing of quarks and gluons in nuclei will be given.

The atomic number dependence of inclusive spectra and heavy-quark states production in pA and AA-collisions will be considered in detail.

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

Organisers: Y. Foka and C. Lourenço

Tuesday 11 November

LEP EXPERIMENTS COMMITTEE

Open session

at 09.00 hrs – Auditorium

Reports on the LEP machine

09.00-09.20 Future LEP operation (Chris Llewellyn Smith)

09.20-09.50 LEP2 status (Roger Bailey)

Reports on the LEP experiments

09.50-10.20 L3 (Martin Pohl)

10.20-10.50 OPAL (Alan Honma)

10.50-11.15 Coffee break

11.15-11.45 ALEPH (Peter Dornan)

11.45-12.15 DELPHI (Philippe Charpentier)

LEP working group reports

12.15-12.30 Four-jet events (Dieter Schlatter)

12.30-13.00 Supersymmetry (Luc Pape)

13.00 - 14.30 Lunch

Closed session

at 14.30 hrs, 6th floor Conference Room, Main Building

Tuesday 11 November

TECHNICAL PRESENTATION

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

IBM RS/6000 – What's new presentation

by Dominique DUVAL / IBM Switzerland

October 6th 1997 was a major milestone in the life of the RS/6000 family history. IBM announced products and solutions that bring you new computing capabilities and enhanced performance, and also introduced AIX Version 4.3, the 64-bit implementation of AIX.

This presentation will essentially focus on the architectural evolution's of the RS/6000 SMP and RS/6000 SP servers, with a special light on the new 64-bit S70 RS/6000 server.

Organiser : S. Cannon / IT / 75036

Tuesday 11 November

IT TRAINING TUTORIAL

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

Everything you wanted to know about mail addresses

by Dietrich WIEGANDT / CERN-IT

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

Miguel Marquina and Raul Ramos / IT User Support

Wednesday 12 November

PS SEMINAR

at 11.00 hrs – PS Auditorium

Room Temperature versus Superconducting Pulsed Proton Linac

by Klaus BONGARDT / Jülich

CERN has played a pioneering role in developing superconducting cavities for LEP and now more and more applications are emerging for proton machines. Using the recent studies of the 5 MW European Spallation Source (ESS) proton linac, basic considerations and scaling laws can be developed to compare room temperature with superconducting pulsed proton linac. The necessary R&D programme for a high gradient SC linac will be outlined and low duty cycle linacs discussed.

Organiser: B. Autin /PS-DI

Thursday 13 November

LHC TECHNICAL SEMINAR

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

LHC magnet tests: technology and objectives

by P. SIEVERS and L. WALCKIERS/ CERN-LHC