

SEMINARS SEMINAIRES

Tuesday 25 May

SPS AND PS EXPERIMENTS COMMITTEE

Open session

at 09.00 hrs – Auditorium, bldg 500

1. Status report from PS211 : J.-P. Revol (40 min.)
2. Status report from NA47 : V. Hughes / R. Windmolders (30 min.)
3. Status report from NA58 : S. Paul (30 min.)

Closed session

at 13.00 hrs – 6th floor Conference room, Main Building

Tuesday 25 & Wednesday 26 May

1999 CERN WORKSHOP ON STANDARD MODEL PHYSICS (AND MORE) AT THE LHC

Tuesday 25 May

Morning session

at 09.00 hrs – Council Chamber, bldg 503

- 09.00 - 09.15 Introduction
- 09.15 - 10.45 QCD (1)
- 09.15 - 10.00 Dave Soper, Jets and Partons
- 10.00 - 10.45 Stefan Taprogge, Experimental aspects of QCD studies at the LHC
- 10.45 - 11.15 *Coffee break*
- 11.15 - 12.15 B Production (1)
- Paolo Nason/Giovanni Ridolfi, Theoretical aspects of charm and bottom quark production
- 12.15 - 13.00 Dieter Zeppenfeld: Tevatron run II and beyond
- 13.00 - 14.00 *Lunch*

Afternoon session, Main Auditorium

- 14.00 - 15.00 TOP (1)
- 14.00 - 14.30 Michelangelo Mangano, Top production
- 14.30 - 15.00 Ilias Efthymiopoulos: Experimental aspects of top studies
- 15.00 - 16.00 EWK (1)
- 15.00 - 15.30 Wolfgang Hollik, Theoretical aspects of EWK physics, part 1
- 15.30 - 16.00 Zoltan Kunszt, Theoretical aspects of EWK physics, part 2
- 16.00 - 16.30 *Coffee break*
- 16.30 - 18.00 EWK (2)
- 16.30 - 17.00 Bob Wagner, EWK physics at the Tevatron
- 17.00 - 17.30 Speaker TBA, Precision measurements of M_W , etc. at the LHC
- 17.30 - 18.00 Speaker TBA, Measurements of triple gauge couplings at the LHC

Wednesday 26 May

Morning session

at 09.00 hrs – Auditorium

- 09.00 - 10.00 B Production (2)
- 09.00 - 09.20 speaker TBA: b triggering and detection
- 09.20 - 09.40 speaker TBA: The measurement of b production properties

Vous pouvez aussi consulter

For information on these seminars, please see

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

- 09.40 - 10.00 speaker TBA: Open issues in the experimental simulation of b signals
- 10.00 - 11.00 QCD (2)
- 10.00 - 10.30 James Stirling, Parton distributions and their implications for LHC.
- 10.30 - 11.00 M. Dittmar, Cross section measurements at the LHC
- 11.00 - 11.30 *Coffee break*
- 11.30 - 12.45 B decays (1)
- 11.30 - 12.15 Robert Fleischer, CP violation in B decays: Theory
- 12.15 - 12.45 Guy Wilkinson, CP violation in B decays at the LHC: Experiment
- 12.45 - 14.00 *Lunch break*

Afternoon session, Main Auditorium

- 14.00 - 15.30 TOP (2)
- 14.00 - 14.30 Martin Beneke, EWK (and other) aspects of the Top quark: theory
- 14.30 - 14.50 Speaker TBA, The measurement of the top mass and top production properties
- 14.50 - 15.10 Speaker TBA, The measurement of EWK properties of top quarks
- 15.10 - 15.30 Speaker TBA, Search for phenomena beyond the SM in the top system
- 15.30 - 16.00 *Coffee break*
- 16.00 - 17.00 B decays (2):
- 16.00 - 16.15 TBA, Physics potential and feasibility of $B_s \rightarrow J/\psi \phi$
- 16.40 - 17.00 TBA, Rare B decays: Experiment
- 17.00 - 17.45 Gian Giudice, Beyond the orthodoxy
- 17.45 - 17.50 Conclusion

Tuesday 25 May

CERN HEAVY ION FORUM

at 10.00 hrs – TH Conference Room, bldg 4/3-004

QCD in extreme conditions; chiral symmetry and the phase diagram

by Frank WILCZEK /Institute for Advanced Study, Princeton

Two lectures, two more will follow on Friday, 28 May.

I: QCD in Extreme Conditions: General Introduction

This will be a general overview of QCD in the limits of high virtuality, high temperature, and high density, where we have the clearest understanding of how to relate the phenomena to fundamental theory. Recently there have been dramatic developments in our understanding of the high-density behavior, bringing new perspectives on confinement and chiral symmetry breaking. I will especially emphasize these.

II: Chiral Symmetry and the Phase Diagram

I will first discuss how general renormalization group arguments allow us to make some rigorous yet highly non-trivial statements about the phase transition to chiral symmetry restoration. Then I will combine these results with some general arguments to make it plausible that there is a

true critical point in QCD, and briefly discuss experimental signatures for it (following Stephanov, Rajagopal, and Shuryak). I will also discuss related out-of-equilibrium phenomena, especially the possibility of a disordered chiral condensate.

Organisers: Yiota Foka and Ulrich Heinz

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

Wednesday 26 May

THEORETICAL SEMINAR

at 14.00 hrs – TH Conference Room, bldg 4

Unification, Fermion Masses, and Proton Decay

by Frank WILCZEK / I.A.S. Princeton

I will first briefly review the case for supersymmetric gauge theory unification, based on rationalizing the Standard Model multiplets and hypercharges, quantitatively unifying its couplings, and (now) setting the scale for neutrino masses as observed. Then I will discuss issues around the symmetry breaking pattern, as reflected in doublet-triplet splitting and in the pattern of fermion masses. One possibility for obtaining a viable, economical, over-constrained model will be advertized. Finally I will discuss the encouraging implications of all this for proton decay experiments.

Thursday 27 May

CERN-ITU MANAGEMENT BRIEFING

09.00 to 12.00 hrs – Conference Room, bldg 40/S2-B01

CERN, in partnership with the International Telecommunications Union (ITU), Helsinki Business School of Economics and Stratnet SA, organizes an informal seminar series in strategic management. The aim of the seminar series is to summarize the recent developments in strategic management disciplines, using practical case examples from ITU which is currently undergoing an management transformation process. These half-day seminars are aimed at different management levels throughout the organization. The third session, open to anyone interested in strategic management issues, is titled 'CONVERTING VISIONS INTO ACTION AND RESULTS'.

More information can be found at

http://www.cern.ch/CERN/Divisions/DSU/spu/ITU_welcome.html

Organiser: M. Nordberg / DSU / 77377

Thursday 27 May

LARGE HADRON COLLIDER COMMITTEE

at 09.00 hrs – Auditorium, bldg 500

Open Session

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|-------------|---|
| 09.00–09.15 | Status of the LHC project (L. Maiani) |
| 09.15–10.00 | Status of the LHC machine (L. Evans) |
| 10.00–10.30 | COFFEE BREAK |
| 10.30–11.15 | ALICE proposal addendum: Transition Radiation Detector (P. Braun-Munzinger) |
| 11.15–12.00 | Report from the Standard Model Workshop (G. Altarelli) |

Thursday 27 May

SCIENCE, TECHNOLOGY AND INDUSTRY SEMINAR

at 14.00 hrs – Conference Room, bldg 40/SS-D01

The do's and don't's in IPR matters

by Johan A.A. VOS / Director of Technology Transfer
Universiteit van Amsterdam

Intellectual Property Rights have become more and more important in today's economy. The ownership of a process, material or compound is crucial in the stage of developing a basic idea or invention into a product that is ready to be marketed.

Researchers of scientific institutes are not used to keep knowledge hidden for others. On the contrary: they want to share their ideas in an early stage with fellow researchers and gather more knowledge about the basic issues behind the reason of our existence.

Combining the aspects of non-disclosure, protection and exploitation with open communication and worldwide co-operation can be seen both as a burden or as a challenge. It is important for scientists to understand the basic elements of IPR in order not to be surprised and to use IPR as an enabling instrument in the ever continuing process of research.

at 15.30 hrs – Conference Room, building 40/SS-D01

How to stimulate scientists for technology transfer actions

Technology Transfer is not a natural task for scientists. Most scientists are especially interested in fundamental aspects and have little affection with the steps industry take to fulfil the needs in the marketplace.

Nevertheless, over the past decade politics tend to calculate the economic value that result from the investments in scientific research. One of the complaints from both politics and industry is that only limited scientific results are – instantly – useful for developing new products and services. All publicly funded research institutes have the obligation to serve the community; in this era serving the community especially means effectively transferring knowledge and technology to the business community.

The only way technology transfer will be effective is when researchers are convinced tech transfer is useful for themselves, their institute and the community. Managers of research institutes will have to stimulate actively their researchers to take part in technology transfer actions.

On both topics, Johan Vos will explain the policies that have been developed over the last years at the Universiteit van Amsterdam and the results that have been achieved.

Thursday 27 May

COSMOLOGY WORKSHOP

at 14.00 hrs – TH Conference Room, bldg 4

Matter creation in the early Universe

by I. TKACHEV / CERN

I shall discuss recent progress in understanding matter creation after inflation. While explosive stimulated decay of inflaton oscillations may be the dominant channel of reheating, sub-dominant processes like gravitational creation of matter from the vacuum fluctuations may lead to consequences which are observable today. Among those are superheavy dark matter and possible relation to the phenomenon of the highest-energy cosmic rays. I will also discuss the previously neglected process of the inflaton decay into fermions which turns out to be extremely efficient.

Thursday 27 May

TECHNICAL PRESENTATION

14.00 to 17.00 hrs – bât. 40/R-D10

Low Level Instruments and PC-Measurement products

by P.LINDQUIST & J. BÖTSCHI / Keithley Instruments S.A./

Presentation of sensitive measurement products such as: Electrometers, Nanovoltmeters, Micro-ohm meters, Picometers, Precision Sources.

SMU's (Source-Measure Units) for component characterisation and many other utilisations. High voltage devices. A series of Digital Multimeters with built in scanners. Miniaturised modules for performing precision measurements over Ethernet or other type of standard-bus. High demand switching.

In addition they will also present some of their PC-measurement products - software and hardware, as well as the real-time applications control system ADWIN.

Language : English, French, German, Swedish

Information : S.Shearer SPL / 76360

Jeudi 27 mai

PRÉSENTATION TECHNIQUE

14h00-17h00 hrs – Bus d'exposition INFOLINER/

Parking Bât. 252

Connexions sans vis

par M. A. ZINGG / WAGO CONTACT (CH)

Vous obtiendrez des informations sur les connexions sans vis telles que la connexion CAGE CLAMP, éprouvée des milliards de fois, CAGE CLAMP COMPACT ainsi que sur la connexion par enfichage direct utilisée dans les boîtes de dérivation. La nouvelle connexion par perçage d'isolant FIT CLAMP, intégrée dans les bornes sur rail, vous sera également présentée.

Langues : allemand, français, anglais

Information : S.Shearer/SPL-PS/76360

Thursday 27 May

LHC PROJECT SEMINAR

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

Accelerator physics and technology challenges

by Lyndon EVANS / DG Division

The design of the LHC incorporates our accumulated knowledge of the physics of particle beams in storage rings. Phenomena governing the dynamics of single particle motion include nonlinear effects introduced by imperfections in the magnetic field as well as the Coulomb interaction between particles in the same beam. The interaction with particles in the opposite beam gives rise to additional strong nonlinearities, limiting machine performance.

Collective effects lead to instabilities at high intensity and require special means to combat them. Finally, in order to obtain the design energy of 7 TeV per beam, considerable technological innovation is necessary, in particular, the massive use of superfluid helium in order to obtain the very high magnetic field. In this talk, some of the main accelerator physics issues and technological challenges are discussed. The presentation will assume only a superficial knowledge of accelerators and applied superconductivity.

Thursday 27 May

SL SEMINAR

at 16.00 hrs* – SL Auditorium, bldg 864

Highlights from the PEP-II commissioning

by Massimo PLACIDI / CERN

The SLAC PEP-II B-Factory is a new generation e^+e^- Asymmetric Collider commissioned in the winter run '98-'99. The attained performance in terms of single- and multi-bunch luminosity is quite promising and the improvements

planned for the March-May shutdown will allow to reach figures close to design and will mark the beginning of the experimentation with the BaBar detector installed in the meanwhile in the accelerator Interaction Region.

The parallel commissioning of the two rings will be described together with the collision diagnostics and procedures implemented to optimise the luminosity.

First experience with beam-beam issues associated with two rings operating with different energies and beam currents will be documented and possible hints for colliding multi-bunch beams in future accelerators will be discussed.

Information:

<http://www.cern.ch/CERN/Divisions/SL/news/news.html>

Organiser: Werner Herr / SL Division

** Tea and coffee will be served at 15:30 in front of the Auditorium*

Thursday 27 May

CERN COLLOQUIUM

at 16.30 hrs – Auditorium, bldg 500*

Getting its from BITS

by Frank WILCZEK / Institute for Advanced Study, Princeton

A great program in natural philosophy, going back at least as far as Pythagoras, has been to derive the structure of the world from pure numbers. After a brief historical introduction, I will discuss where we stand with this program. I shall argue that in some parts of physics we have realized it to an amazing extent, but that major challenges remain.

Organiser : Luigi DI LELLA / EP Division

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

Friday 28 May

CERN HEAVY ION FORUM

at 10.00 hrs – TH Conference Room, bldg 4

QCD at finite baryon density

by Frank WILCZEK / Institute for Advanced Study, Princeton

I: Methods and Color-Flavor Locking

Recently, by combining methods of many-body theory (Fermi liquid and BCS theory, Landau damping) to QCD with asymptotic freedom, we have been able to form a rigorous understanding of the asymptotically symmetry breaking in a fully calculable framework. For example, all the elementary excitations carry integral electric charge.

A key concept is that both color and flavor symmetry are separately broken, but a combination of the two remains valid: color-flavor locking.

II: Quark Description of Hadronic Phases

I will first argue that the calculable high-density phase (from part I) resembles in many significant details the phase one expects based on conventional wisdom and experimental and numerical experience at low density. This makes it plausible that there is no phase transition: quark-hadron continuity. I will then discuss the interesting complications that come in when we take into account that the strange quark mass is not negligible in reality.

See announcement of HIF on 25 May 1999 with the first two lectures by F. Wilczek.

Organisers: Yiota Foka and Ulrich Heinz

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

Friday 28 May

COMPUTING COLLOQUIUM

at 14.00 hrs – Auditorium, bldg 500

Massive Computing Complexes

by John GAGE / Sun Microsystems

About the speaker

John Gage is the Chief Researcher and Director of the Science Office, for Sun Microsystems.

Gage attended the University of California, Berkeley, the Harvard Kennedy School of Government, and the Harvard Graduate School of Business. He did doctoral work in mathematics and economics at the University of California, Berkeley, and left Berkeley in 1982 to join Sun Microsystems.

Monday 31 May

DETECTOR SEMINAR

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

The ZEUS Central Tracking Detector

Second Level Trigger

by A. QUADT / EP Division

We present the Second Level Trigger for the Central Tracking Detector (CTD-SLT) of the ZEUS experiment. The CTD-SLT consists of a network of microprocessors running a track finding algorithm. Operational experience gained during the 1995 to 1997 HERA data taking periods show that the maximum processing rate approaches 800 Hz, with almost 100% track finding efficiency and adequate p_t and vertex resolution of $\sigma(p_t) \sim 0.05 p_t^2$ (p_t in GeV) and $\sigma(z_{vtx}) \sim 9$ cm. The online performance of a highly parallel system with dynamic loading such as the CTD-SLT is characterised by two quantities, the average throughput (speed) and the processing time per event (latency). Detailed understanding of these quantities for the CTD-SLT from operational experience, simulations and a simple model will be discussed.

Information:

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

Organiser: Rui Ribeiro / EP Division

Monday 31 May

LHC MACHINE ADVISORY COMMITTEE

Open session

at 14.00 hrs – LHC Auditorium, bldg 30

14.00 S. Tazzari - Introductory remarks

14.05 L. Evans - Current status of LHC project

15.25 Break

15.40 C. Wyss - Status of magnets

16.50 F. Ruggiero - Report on beam-beam workshop

17.20 End of session

* Please note times may change

Monday 31 May

CERN EP SEMINAR

at 16.30 hrs – Auditorium, bldg 500*

Measurement of the $|V_{ub}|$ matrix element at LEP

by Marco BATTAGLIA / University of Helsinki and
Pierre HENRARD / LPC Clermont-Ferrand

The understanding of the origin of the CP symmetry violation is one of the most important open questions in High Energy Physics. In the framework of the Standard Model, CP violation is accounted for by the appearance of a phase in the Cabibbo-Kobayashi-Maskawa (CKM) mixing matrix. From this point of view, an accurate determination of the $|V_{ub}|$ matrix element is very important. The ARGUS and CLEO experiments have been pioneers in this field but their measurements suffer from large theoretical uncertainties in the modelling of the $b \rightarrow u$ transitions (20-25% relative error on $|V_{ub}|$).

Recently, the LEP experiments have measured for the first time the inclusive charmless semileptonic branching ratio, $Br(b \rightarrow X_u l \nu)$, from which $|V_{ub}|$ can be extracted with less dependence on theoretical assumptions. The three analyses performed by the ALEPH, DELPHI and L3 experiments and the techniques used to reconstruct the inclusive charmless semileptonic B decays will be described. The method used to average the three results will be presented and the extraction of the value of $|V_{ub}|$ will be discussed and compared with the results obtained by the ARGUS and CLEO experiments.

Organiser : Fabiola Gianotti / EP Division

* Tea & coffee will be served at 16.00 hrs.

Tuesday 1 June

CERN PARTICLE PHYSICS SEMINAR

at 16.30 hrs – Auditorium, bldg 500*

Results of the AMS experiment

by Samuel C.C. TING / CERN and MIT

The AMS experiment is a magnetic spectrometer designed and constructed to measure charged particles in space. For its first flight, the detector used a permanent magnet together with a precision silicon tracking detector, time-of-flight counters and aerogel counters. The first 10-day flight of AMS took place on June 2, 1998 on board the NASA Space Shuttle Discovery. The construction of the AMS detector, the first results of the shuttle flight and the future plans of AMS will be presented.

Organiser : Jasper Kirkby / EP Division

* Tea & coffee will be served at 16.00 hrs.

Thursday 3 June

SL/LHC PROJECT SEMINAR

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

Summary of the Workshop on Beam-beam Effects in Large Hadron Colliders

by Werner HERR / SL

The beam-beam interaction can limit the performance of hadron colliders such as the LHC and these effects have to be taken into account during the design of the accelerator. A workshop was held at CERN from 12th to April 16th to review the current knowledge and experience and to discuss ongoing and future studies. In this seminar an overview of the basic problems will be presented and the recommendations and conclusions of the workshop are discussed.

Friday 4 June

IT INFORMATICS TUTORIAL

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

Introduction a PowerPoint

by Alberto PACE / CERN-IT