

SEMINARS SEMINAIRES

Tuesday 8 October

TECHNICAL PRESENTATION

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

Motorola high speed data transmission components

by Andreas GUENTHER / Motorola Munich

The Motorola OPTOBUS multi-channel optical data link is a 10-bit wide bi-directional fibre link designed for distances up to 300 meters and speeds up to 400Mb/sec/fibre. OPTOBUS links are protocol independent and the interface to the chips use inexpensive circuits. Because the links are designed with electrical I/O, user knowledge of optical technology is not necessary.

A complete OPTIBUS link consists of two transceiver modules and two 10-channel fibre connectorized ribbons. The transmitter subsection consists of 10 different Current Mode Logic (CML) inputs and 10 optical output channels. Likewise, the receiver subsection consists of 10 optical inputs and 10 differential CML outputs.

In addition to a presentation on the Motorola OPTIBUS technology and status, future OPTIBUS developments will be discussed. The presentation will also cover high speed electrical data transmission products from Motorola.

Information: R. McLaren/ECP 74907

Organiser : S. Cannon / CN / 75036

Tuesday 8 October

43rd MEETING OF THE

LEP EXPERIMENTS COMMITTEE

Closed session

at 09.30 hrs - 6th floor Conference Room

JOINT PARTICLE PHYSICS SEMINAR AND LEP C

Open session

at 14.00 hrs * - Auditorium**

Report on the LEP machine

14.00-14.30 Status of LEP (Daniel Brandt)

Reports from the LEP experiments on LEP161 results

14.30 -15.00 DELPHI (Wim de Boer)

15.00 -15.30 ALEPH (Ramon Miquel)

15.30-16.00 Coffee break

16.00-16.30 L3 (Martin Pohl)

16.30-17.00 OPAL (Nigel Watson)

* Please note unusual time

** Tea & coffee will be served at 15.30 hrs

Wednesday 9 October

THEORETICAL SEMINAR

at 14.00 hrs - TH Conference Room

One-loop gauge couplings from strings: what threshold corrections can (or cannot) do.

by Marios PETROPOULOS / CERN

In the past several years, there has been significant progress in trying to compare low-energy predictions of string theory with experimental data. In the framework of heterotic string compactifications, I will review how effective gauge couplings can be unambiguously determined at one loop. I will focus in particular on the role played by corrections due to heavy string excitations. These "threshold corrections" are exactly computable quantities, which exhibit interesting universality properties. I will illustrate these properties by displaying several examples, and analyse their consequences for the issue of string unification as well as for solving the decompactification problem in string theory. This might be a fundamental ingredient in the super-symmetry-breaking recipe.

Jeudi 10 octobre

PRÉSENTATION TECHNIQUE

10.00 à 13.00 hrs - Salle de conférence Bât. 2/1-034

Data Acquisition and **VXI** Produits

par LOGOTRON SA CH (rép.ICS Corp USA)

Présentation et documentation concernant les produits d'acquisition de données de la maison "ICS Electronics Corp".

Langues : anglais, français

Information : L. Abel/FI-A /79561

Thursday 10 October

CERN COLLOQUIUM

at 16.30 hrs - Auditorium*

From Light to Consciousness : Journey to the End of Science or Fin de Siècle Malaise

by Leon COOPER / Director of Institute for Brain and Neural Systems, Brown University, Providence, U.S.A; Nobel Price for Physics in 1972.

As the twentieth century gropes toward its uncertain conclusion, the pontification quotient increases. We hear that the end of history and science are near; that the questions we face today (in contrast with the end of the 19th century) are no longer soluble or present theories verifiable.

These arguments will be examined using two examples. The first, familiar to all physicists, already resides securely in the museum of intellectual achievement. The second is a work in progress : the physiological and/or molecular basis for brain functions such as learning and memory storage. How do these lead to various higher level system properties - in particular, consciousness ?

About consciousness, much has been said and written - not all of it illuminating. We discuss some of this, in particular a recent argument of Penrose. We consider whether the nature of consciousness is a (possibly) soluble scientific question. If so, how should it be posed ? Finally, if the end is not near, when will it come ? Are there any limits to science ?

* Tea & coffee will be served at 16.00 hrs.

Friday 11 October*

LHC SEMINAR

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

How do we protect the LHC superconducting magnets in case of a quench?

by Felix RODRIGUEZ-MATEOS / CRN-LHC

Superconducting magnets have to be designed in order to avoid damage in case of a transition from the superconducting to the normal state (quench). In this seminar the protection of the superconducting magnets for the Large Hadron Collider will be presented. From simulations to actual magnet tests, and from tests to the design of the real protection system, the aim is to keep the maximum temperatures and voltages below the defined safety limits. A general overview on magnet protection will be given. Afterwards, a more detailed discussion will concentrate on the LHC dipole magnet.

** Please note the unusual day and time!*

Friday 11 October

MEETING ON PARTICLE PHYSICS PHENOMENOLOGY

at 14.00 hrs - TH Conference Room

Light quark masses from lattice QCD

by Rajan GUPTA / Los Alamos

We present estimates of the masses of light quarks using lattice data. Our main results are based on a global analysis of all the published data for Wilson and Staggered fermions, both in the quenched approximation and with $n_f = 2$ dynamical flavours. We find that the values of masses in the Wilson and Staggered formulations agree after extrapolation to the continuum limit for both the $n_f = 0$ and $n_f = 2$ theories. Our best estimates, in the $\overline{MS}$ scheme at $\bar{m}_l = 2$ GeV, are $m = 3.1$ (3) MeV and $m_s = 90$ (20) MeV in the quenched approximation, and $m < 2.7$ MeV and $m_s = 55$ -70 MeV for the $n_f = 2$ theory. These estimates are significantly smaller than phenomenological estimates based on sum rules and chiral perturbation theory and have important consequences for E'/E .

Monday 14 October

MEETING OF THE VMEBUS INTERNATIONAL PHYSICS ASSOCIATION - VIPA

at 09.00 hrs - PS Auditorium, bldg. 6/2-024

by Bob DOWNING / University of Illinois, VIPA and VSO, Jaap PANMAN / CERN, EPAC Chairman & Jin PANGBURN / FermiLab & VIPA

All those interested in the application of VMEbus to physics, including designers, users and manufacturers are encouraged to participate.

The two main topics foreseen at present are a presentation and review of the VIPA "VMEbus for Physics Applications" document, which has recently been subject to a ballot review in Europe, and a presentation of the CERN Electronics Pool Advisory Committee's (EPAC) discussion paper entitled "Towards a Single Standard for Modular Electronics". In addition, some time will be allotted for manufacturers and institutes to briefly present designs and products conforming to the VIPA proposals. Please contact the undersigned if you wish to take advantage of this possibility. More information is available via the ESONE WWW site (<http://www.cern.ch/ESONE/ESONE.html>), which you are

encouraged to consult for the latest agenda and other information.

Arrangements are informal and there will be no charge for attendance, however, you are kindly requested to register your intention to participate by Email to Chris Parkman (chris.parkman@cern.ch).

Rittal Steering Committee Corporation and LeCroy have indicated their intention to present products and others are expected.

Organised by the ESONE/CERN VMEbus

Monday 14 October

TECHNICAL PRESENTATION

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

The High Performance Storage System (HPSS)

by Danny TEAFF & Harry HULEN / IBM

The High Performance Storage System (HPSS) is an open system software that introduces a new era in the management of huge amounts of data produced and used by super fast computers and networks with an enormous data traffic.

HPSS has been designed and built by IBM in partnership with leading research labs and universities, it addresses the very real, very urgent high end storage capacity and performance requirements created by the exponential data explosion of the 1990's - an explosion that is projected to continue well into the next century.

The presentation will include a technical overview with relevant detail of the HPSS architecture and its installability, usability and scalability.

Overview

- Introduction
- Objectives
- Features
- Key Storage Concepts
- Server Components
- Infrastructure
- User Interfaces
- Policy
- Hardware Platforms
- Control and Data Flow

Planning

- Prerequisite Software
- Server Allocation
- Hardware Considerations
- Interface Considerations
- Storage Policy Considerations
- Sizing Considerations
- Performance Considerations

Site Configuration Examples

Organiser : S. Cannon / CN / 5036

Monday 14 October

TECHNICAL SEMINAR

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

3D: A new architecture for semiconductor radiation detectors

by Sherwood PARKER / Univ. of Hawaii

Silicon detectors as well as integrated circuits have, up to now, used planar technology with all circuit elements being fabricated in the top few percent of the semiconductor wafer. Such detectors, now planned for LHC experiments,

face significant difficulties from bulk radiation damage which requires perpetual refrigeration at sub-zero temperatures or ever-increasing voltages for proper operation. Charge collection times are also somewhat longer than LHC bunch intervals.

A proposed method will be described for making detectors with 3D electrodes which penetrate through most or all of the silicon bulk. Collection distances and calculated collection times are reduced by about one order of magnitude. Depletion voltages, rather than rising to hundreds of volts as damage sets in, remain below 10 V. Current progress and some open questions will be discussed.

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/>

Tuesday 15 October

TECHNICAL SEMINAR

at 10.00 hrs - PS Conference Room, bldg 6/2-024
Fieldbuses - an introduction to the
technology and how to use it
by Franz Rudolf BUNGER / Chairman Swiss National
Committee TC65 of IEC and CENELEC

Wednesday 16 October

SEMINAR FOR CERN GUIDES

organized by CERN Visits Service - Groupe DSU/CP
at 16.00 hours - Auditorium
The Bubble Chamber and its Contribution to
Particle Physics
by Gert HARIGEL / CERN

Jeudi 10 octobre

ENSEIGNEMENT GENERAL

à 13.00 h - Amphithéâtre

Science pour tous

par Rafel Carreras

Reprise des séances

*Veillez prendre note qu'il n'y aura pas de séance
le jeudi 24 octobre.*

FORMATION EN LANGUES LANGUAGE TRAINING

Françoise Benz « 73127
Andrée Fontbonne ® 72844

DO YOU NEED ENGLISH?

English courses at CERN start on
Monday 14 October 1996.

COMMENT AMELIORER VOTRE ANGLAIS?

Les cours d'anglais au CERN commencent
le 14 octobre 1996.

Veillez contacter: Françoise Benz au 73127, ou
Ulrich Liptow au 72597
avant le 7 octobre 1996.

COMMENT AMELIORER VOTRE FRANÇAIS?

Les cours de français au CERN commencent
le 14 octobre 1996.

DO YOU NEED FRENCH?

French classes at CERN start on
Monday 14 October 1996.

Please contact: Françoise Benz on 73127, or
Andrée Fontbonne on 72844
;
before Friday 7 October 1996.