

SEMINARS SEMINAIRES

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For full information on these seminars, please see
<http://wwwas.cern.ch/Bulletin/Seminars/current.html>

Monday 28 July

COSMOLOGY MEETING

at 14.00 hrs - TH Conference Room

Symmetry non-restoration, hierarchy and running couplings

by Jean Orloff / LAPP, Annecy

After reviewing Weinberg's mechanism for symmetry non-restoration at high temperatures, we offer a physical interpretation of the effect. We proceed to show that in any renormalisable field theory, this mechanism necessarily rests on a hierarchy problem for some scalar. We then study the vulnerability of the effect in the simplest model with two scalars w.r.t. higher order corrections in the framework of a large N expansion. We conclude that the effect subsists in the large N limit, and that couplings running only tends to reinforce it. We finally discuss the implications in cosmology and in the large N limit, and that couplings running only tends to reinforce it. We finally discuss the implications in cosmology and present a simple perturbative model of electroweak symmetry non restoration.

Tuesday 29 July

IT TRAINING TUTORIAL

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

C++ Techniques II

Features of the new language standard

by Christoph VON PRAUN / CERN-IT

Numerous features have been refined and added to the programming language C++ in recent years. The lecture presents an overview on the most significant innovations that the ANSI standardisation process has brought to C++. The following language features and their use are discussed in detail:

- The philosophy of Templates
- The structure and usage of the Standard Template Library (STL)
- C++ type casts
- The purpose and use of the Run Time Type Identification (RTTI)

Wednesday 30 July

THEORETICAL SEMINAR

at 14.00 hrs – TH Conference Room

Towards a resolution of the information paradox in black hole physics

by Spenta WADIA / TH Division, CERN

According to Hawking, information falling into a black hole would disappear completely when a black hole evaporates. This information loss introduces a new level of uncertainty over and above the usual uncertainty in quantum mechanics. It is also in conflict with the standard unitary evolution of the wave function in quantum mechanics. Recent developments in M-theory (which evolved from String Theory) propose a microscopic description of the black hole wave function, within the standard treatment of quantum mechanics. This explains many of the mysterious features of black holes, including the Bekenstein-Hawking entropy and the rate of Hawking radiation. We review these developments and the status of the Information Paradox.

Wednesday 30 July

EST-MF TECHNICAL SEMINAR

at 14.00 hrs - bld. 33, "Visits" Conference Room

Friction based processes for fabrication (Joining without melting !)

by Dave NICHOLAS / TWI, The Welding Institute, UK

TWI introduced friction welding to its Research Members as early as 1961. Today the process is applied in a wide range of industries from subsea to aerospace, and the Friction Welding Laboratory at TWI has expanded to include some 23 machines.

Dave Nicholas, a metallurgist by qualification, has led this development for 30 years. He was responsible for developing friction welding in hostile environments and introducing linear and orbital motion systems for joining non-round parts. In December 1991 his colleague, Wayne Thomas, invented the process of friction stir welding, which must be considered a major step change this century in the joining of aluminium and its alloys in thickness from 1.2 mm up to 75 mm.

Dave Nicholas will present these processes and will specifically focus his attention on the method of friction stir welding in view of its potential application to fabricate structures needed for particle physics experiments. He will also take this opportunity to introduce TWI's services, facilities and other innovations such as low pressure electron beam, microjoining for electronics, and high power lasers. Where appropriate, selective videos will be used to complement his presentation.

The proposed agenda will therefore be :

- TWI - An Introduction
- Friction Welding - An Introduction
- Friction Based Processes - A Review
- Friction Stir Welding
- General Discussion.

Information: F. Bertinelli / 75098 or A. Desirelli / 78417

Thursday 31 July

SL SEMINAR

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

Functionality of the LEP tune meters based on DSP technology

by Karl-Dietmar LOHMANN / CERN-SL

The LEP tune meters have been designed around 3rd generation DSPs. On-line signal processing is used for Fast Fourier Transforms, real time display of beam oscillations and numerical regulations. The resulting functionality for the control room and the performance are described in detail.

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

Friday 1 August

IT TRAINING TUTORIAL

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

Basic Unix Commands / Unix File System

by Miguel MARQUINA / CERN-IT

This first lecture on Unix will focus on how to work with files in Unix. The file tree structure will be explained and how you find your way around in it (relative and absolute path names). Also covered are the manipulation of files and directories (i.e. creation, deletion, printing and how you can share files with other people), the special files stdin and stdout, and the concept of redirection.

This is a repeat of the course given in 1995 and 1996.

Monday 4 August

PPE SEMINAR

at 16.30 hrs – Auditorium*

Future experiments at the BNL-AGS

by Milind VAMAN DIWAN / Brookhaven National Laboratory

I will discuss results from the current round of kaon experiments at BNL. Then I will talk about future possibilities to measure $K \rightarrow \pi \nu$ anti- ν in both charged and neutral mode, $\mu \rightarrow e$ conversion, and other kaon measurements using new capabilities of the accelerator.

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

Tuesday 5 August

IT TRAINING TUTORIAL

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

Basic Unix Commands / Jobs & Processes

by Miguel MARQUINA / CERN-IT

This lecture about basic Unix commands will focus on command execution in foreground, background and in batch. You will learn how to list and control all processes started by you. A basic introduction to the LoadLeveler batch system will be given which is being used on the public service CERNSP.

This is a repeat of the course given in 1995 and 1996.