

SEMINARS SEMINAIRES

Tuesday 30 June

TECHNICAL PRESENTATION

09.30–11.30 hrs – CN Auditorium
bldg 31/3-005

DST – Data storage technology, the revolution in data storage by Ampex

by Jeff GREENWALD / Worldwide Marketing
Manager for DST Products

Ampex World Corporation SA (CH/USA) will present their solution to some major difficulties facing the supercomputer users today, i.e. the physical storage of large masses of information, lack of direct on-line data availability for the user and relatively slow data transfer rates.

Swiss representative: John Capper / tel. 037 21 86 86, fax 037 21 86 73

Information : M. Diraison / FI / 4585

Tuesday 30 June*

CERN COMPUTING COLLOQUIUM

at 14.30 hrs – Auditorium**

Restructuring Fortran programs for large-grain parallelism

by Robert BABB / Oregon Graduate Institute

The goal of this project is to develop a toolset to aid in restructuring sequential programs to make them more suitable for Large-Grain (macro task) parallelism. The major problem in reverse engineering existing Fortran programs for large-grain parallelism lies in 'muddled' global data flow. Hence, modifying the interaction between control flow and data flow lies at the heart of our transform approach. As part of this work, we are also exploring ways of opening up and standardizing the interface between parallel scientific programming support environments and compilers and data flow analysis tools. The talk will be accompanied by a demonstration of a prototype programming environment. Both sound and colour graphics are used in the runtime trace animation.

Robert Babb is Associate Professor of Computer Science and Engineering at Oregon Graduate Institute. He has received degrees in astrophysics, mathematics, computer science, and electrical engineering, from the University of New Mexico and the University of Waterloo. He is the founder and co-editor of a new Wiley journal entitled 'Scientific Programming', dedicated to practical aspects of programming to support scientific applications.

* Please note unusual day and time

** Coffee and tea will be served at 14.00 hrs

Wednesday 1 July

THEORETICAL SEMINAR

at 14.00 hrs – TH Conference Room

The spectrum of the Dirac operator and the role of the winding number in QCD

by A. SMILGA / ITEP, Moscow & University of Bern

We show that very general considerations based on the properties of the partition function of QCD allow one to extract information about the eigenvalues of the Dirac operator in vacuum gauge fields. In particular, we demonstrate that the familiar suppression of field configurations with non-trivial topology occurring for small quark masses is a finite size effect which disappears if the four-dimensional volume V is large enough. The formation of a quark condensate is connected with the occurrence of small eigenvalues of order $\Lambda_n \propto 1/V$.

Friday 3 July

TECHNICAL PRESENTATION

10.00–12.00 hrs – CN Auditorium
bldg 31/3-005

Computer aided creativity – Using computer in the creative problem solving methods

by Tapani SAVOLAINEN / Helsinki University of Technology, Institute of Industrial Automation and the company CAC-Research Oy

Up till now, computers have been used to automate and help the routine part of human work. However, we can use the computers to stimulate, teach and guide the most creative 'computer', the human brain, to achieve innovative solutions to all kinds of problems. This is based on computerization of the known creative problem solving methods and developing new methods to be used with computers. The presentation deals with the general principles of Computer Aided Creativity, some early software products, and some early results about using Computer Aided Creativity. The goal of the presentation is to give a general view about the new area of Computer Aided Creativity, its state of the art, and future directions. After the presentation, participants should have an impression about the maturity of this new technology to decide whether they would like to try to apply it to their work or not.

Friday 3 July

MEETING ON PARTICLE PHYSICS PHENOMENOLOGY

at 14.00 hrs – TH Conference Room

Screening the Ellis-Jaffe and Gottfried sum rules

by Richard BALL / University of Oxford

The flavour singlet contribution of the constituents of the nucleon to the first moment of the spin structure function is suppressed in the deep inelastic limit by a non-perturbative screening mechanism catalysed by the axial anomaly. This modifies the Ellis-Jaffe sum rule, resolving the proton "spin

crisis" without invoking large intrinsic strange quark or hard gluon contributions. A possibly related suppression of the Gottfried sum will also be discussed.

Monday 6 July

AC SEMINAR

at 11.00 hrs – Auditorium

The Thermal Wave Model : A Schroedinger equation for charged particle distributions

by Renato FEDELE / University of Naples

Replacing Planck's constant by the emittance in the Schroedinger equation leads to an equation for a 'wave function' whose squared modulus yields the line density of a distribution of charged particles. A Wigner transform can be used to obtain the energy density, and hence the phase-space distribution. The time evolution of a charge distribution in the presence of linear or non-linear potentials can be studied using the large existing body of literature on the Schroedinger equation. The main results of beam optics and particle dynamics can be reproduced, and new insights are obtained readily. Examples are shown for a final focus system of linear colliders, beam-plasma interactions, as well as non-linear beam dynamics in circular accelerators where solitons are predicted to appear under certain conditions.

** Please, note unusual place!*

Monday 6 July

PPE SEMINAR

at 16.30 hrs – Auditorium

Observation of a narrow $p\bar{p}$ baryonium state at a mass of $2.02 \text{ GeV}/c^2$

by V.F. PEREPELITSA / ITEP, Moscow & IFIC, Valencia

We have clearly observed a narrow $p\bar{p}$ baryonium state at a mass of $2.02 \text{ GeV}/c^2$ and a width of about $20 \text{ MeV}/c^2$, produced centrally in various baryon exchange reactions. The data come from the analysis of channels with one missing pion recorded in the WA56 experiment, at the Omega spectrometer. A similar state had been observed earlier (P. Benkheiri et al., Phys.Lett. 68B (1977) 483 and 81B (1979) 380). It had not been confirmed in backward production in the 4-C events of WA56 (Z. Ajaltouni et al., Nucl.Phys. B209 (1982) 301).

Tuesday 7 July

CERN PARTICLE PHYSICS SEMINAR

at 16.30 hrs – Auditorium

Measurement of τ polarisation with the L3 detector

by Richard P. MOUNT / California Institute of Technology

Wednesday 8 July

SL SEMINAR

at 11.00 hrs – SL Auditorium

bldg 864, 1st floor, Preveessin

It's the tunnels which move, isn't? A physicists approach to accelerator component misalignment

by R. PITTHAN / SLAC, Stanford, USA

Thursday 9 July

CERN COLLOQUIUM

Symposium in honour of Professor Willibald Jentschke on the occasion of his 80th birthday

at 15.30 hrs* – Auditorium

Welcome address

by Carlo RUBBIA / Director-General

Willi Jentschke, the fellow Austrian

by Victor WEISSKOPF / MIT

Years at DESY and at CERN.

DESY and other beauties

by Herwig SCHOPPER / University of Hamburg & CERN

Coffee break : 16.30–17.00 hrs

Photons and heavy photons

by Ulrich BECKER / MIT-ETH

From β decay to the Standard Model

by Klaus WINTER / CERN

** Please note the unusual time*