

SEMINARS SEMINAIRES

Monday 3 May

ISOLDE EXPERIMENTS COMMITTEE

Open session

at 14.00 hrs – Council Chamber, bldg 503

1. Introductory remarks by the Chairman.
2. Progress report by the ISOLDE Technical Group Leader.
3. ISOLDE Coordinator's report.
4. High-resolution spectroscopy of Sr and Y nuclei near $N = Z$ line;
CERN/ISC 99-12/P110; M. Oinonen.
5. Interface magnetism investigated with radioactive atoms; CERN/ISC 99-2/P106;
H.H. Bertschat.
6. Beta-decay studies of dripline isotopes of Be;
CERN/ISC 99-16/P99 add.1;
U.C. Bergmann.
7. Investigations of nuclei close to the neutron dripline: Ne and Na and ^8He ;
CERN/ISC 99-11/P109; K. Wilhelmsen Rolander.
8. Spectroscopy of $^{100,102}\text{Pd}$ by means of electron conversion and γ - γ correlation measurements;
CERN/ISC 99-15/P112; P. Sona.
9. Search for new physics in beta-neutrino correlations using trapped ions and retardation spectrometer;
CERN/ISC 99-13/P111; D. Beck.
10. Progress report and beam time request to the ISC (IS364): Beta-decay study of $n\bar{h}\omega$ excitations in neutron-rich (fp) nuclei: Test of the empirical nuclear interaction; CERN/ISC 99-14/P92 add.1; G. Walter.

Closed Session

after the Open Session, 6th floor Conference room, Main Building

Monday 3 May

COSMOLOGY WORKSHOP

at 14.00 hrs – TH Conference Room, bldg 4

Status of Baryonic Dark Matter

by Katherine FREESE / Michigan University

The nature of the dark matter in the Halo of our Galaxy remains a mystery. Arguments are presented that the dark matter does not consist of ordinary stellar or substellar objects; i.e. the dark matter is not made of faint stars, brown dwarfs, white dwarfs, or neutron stars. In fact, faint stars and brown dwarfs constitute no more than a few percent of the mass of our Galaxy, and stellar remnants have a mass density less than 10^{-3} of closure. These conclusions then leave us with a puzzle as to the content of the dark matter of the Galaxy as well as the nature of Massive Compact Halo Objects seen in microlensing experiments. On theoretical grounds one is then pushed to either exotic explanations for Machos or a "no-Macho" Halo (in which the Machos reside elsewhere than in the Halo). Indeed a nonbaryonic component in the Halo seems to be required.

Vous pouvez aussi consulter

For information on these seminars, please see

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

Monday 3 May

CERN HEAVY ION FORUM

at 14.00 hrs – Conference Room, bldg 160/1-009

Selected Topics in p-p, p-A and A-A interactions

by Hans Gerhard FISCHER / CERN

This lecture will concentrate on longitudinal momentum phenomena always using identified secondaries over a large fraction of phase space. The concepts of limiting fragmentation, partonic recombination, stopping and strangeness enhancement will be confronted with data, again with emphasis on the more elementary p-p and p-A collisions.

Organisers: Yiota Foka and Ulrich Heinz

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

Mardi 4 Mai

SEMINAIRE

à 14.00 hrs – Auditorium SL, bât.864 / 1D-002

Contrôle par Réseau de Terrain WorldFIP (Généralités)

par Raymond BRUN SL/LRF

Ordre du jour:

- 14h00 Présentation des concepts et protocole WorldFIP (un seul bus pour tout type de transfert).
 - Variables périodiques.
 - Variables aperiodiques (événements).
 - Messages.
- 14h45 Présentation de la technologie WorldFIP :
 - Composant MICROFIP.
 - Composants FULLFIP2 et FIELDUAL.
 - Composant FIELDRIIVE.
- 15h00 Présentation générale des principaux outils WorldFIP
 - FIP DEVICE MANAGER
 - MICROFIP HANDLER
 - OLGA
 - FIP DESIGNER
 - FIP WATCHER
- 15h10 Planification d'un cours de formation WorldFIP pour le mois de Septembre ou Octobre.
- 15h20 Discussion
- 15h30 Clôture

Nota:

1. Toutes les personnes intéressées par les réseaux de terrain "temps réel", les automates Schneider, Siemens et autres seront les bienvenues.
2. Site WorldFIP-CERN : <http://nicewww.cern.ch/sl/rfgroup/fip/fipmenua.htm>

Organisateur: Raymond BRUN SL/LRF (76946-Linkman WorldFIP CERN)

E-Mail : Raymond.Brun@cern.ch

Tuesday 4 May*

COMPUTING SEMINAR

at 14.00 hrs – Salle DIRAC, bldg 40/SS-D01*

Distributed Object-Oriented Programming using the ADAPTIVE Communication Environment

by Johannes GUTLEBER / Vienna University of Technology

1. Topic

The ADAPTIVE Communication Environment (ACE) is a C++ toolkit for object oriented network programming that has been developed at the Washington University of St. Louis, MI, USA by Douglas C. Schmidt. Since the early days, it addresses high performance environments, such as medical imaging, avionics and telecommunication applications. ACE incorporates an operating system abstraction layer that facilitates porting of applications to different platforms (several UNIX flavours, WindowsNT, LynxOS and VxWorks to name but a few). On top of this layer design patterns that are common to network aware applications have been implemented. ACE contains also a real-time CORBA implementation named TAO. More information on ACE is available through the web <http://www.cs.wustl.edu/~schmidt/ACE.html>

2. Scope

The goal of this tutorial is to present the building blocks of the ACE toolkit. Some patterns are highlighted, namely the streams facility, the reactor, the service configurator, and the active object. Simple examples are presented in order to illustrate the application of object oriented programming in distributed systems. The upper level frameworks, such as TAO will only be mentioned shortly by outlining their capabilities and application areas.

3. Duration*

Two Hours (break included)

4. Background Knowledge

Attendees should have a basic knowledge of object oriented programming. As the toolkit aims at hiding complicated low level information from the application programmer, it is not required to have detailed knowledge about network protocols or operating system details.

Information : <http://consult.cern.ch/seminars>

Organiser : Robert Jones / EP

* Please Note Unusual Day, Time, Duration, And Place

Tuesday 4 May

TECHNICAL PRESENTATION

at 16.00 hrs – IT Auditorium, bldg 31/3-004/5

Software Quality Assurance with McCabe IQ

by Stefan SCHIFFERT / McCabe

The recent flurry of activity and innovation on the software development landscape has made the delivery of high quality, well tested software a greater challenge than it has ever been. Complex, business-critical projects coupled with tight deadlines often force the delivery of under-tested software of unknown quality, resulting in aggravating and costly bugs and system failures. Organisations are in need of a way to standardise, streamline, and build quality into their development process.

The McCabe IQ Framework combines a relevant, repeatable and measurable approach to managing software quality, testing, and change with a unique technology architecture

based on powerful source code parsers. McCabe IQ uses these parsers to analyse software from the inside out — understanding the inner workings of a wide variety of software languages, including C, C++, Java, Visual Basic, COBOL, FORTRAN and Ada. This penetrating and unique analysis helps IT organisations assess software reliability and maintainability, increase test effectiveness, and expedite and automate the testing process to promote and assure the delivery of high quality software systems.

Information: J. Borchert, +49 202 2581-201, sales@mccabe.de

General organiser: S. Cannon/IT/75036/stanley.cannon@cern.ch

Tuesday 4 May

CERN PARTICLE PHYSICS SEMINAR

at 16.30 hrs – Auditorium, bldg 500*

Measurement of $\sin 2\beta$ and future prospects at CDF

by Franco BEDESCHI / INFN, Sezione di Pisa

A new measurement of $\sin 2\beta$ by the CDF collaboration is presented. This analysis is based on a sample of $400 B^0 \rightarrow \psi K_S^0$ events and uses 3 different flavour tagging methods. This result improves the error on $\sin 2\beta$ by more than a factor 2 relative to the previously-published CDF measurement. The future b physics reach of the CDF experiment is also discussed.

Organiser : Jasper Kirkby / EP Division

* Tea & coffee will be served at 16.00 hrs.

Wednesday 5 May

COMPUTING SEMINAR

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

TSIA: The Third Advance in Application Support

by Burkhard BUROW

After compilers and operating systems, TSIA's are the third advance in application support. A compiler supports a high level application definition in terms of a programming language. An operating system supports a high level interface to the resources used by an application execution. A TSIA provides an application with an implicitly parallel, distributed, heterogeneous, adaptive, dynamic, real-time, interactive, reliable, secure or other execution. A TSIA thus supports a high level application execution. A TSIA also supports the application definition. This run-time support is complementary to the compile-time support of a compiler. For example, this allows a language similar to Fortran or C to deliver features promised by functional computing. While many TSIA's exist, they previously have not been recognized as such and have served only a small variety of applications. Existing TSIA's and other projects demonstrate that TSIA's are feasible for most applications. This talk outlines TSIA, with emphasis on its motivation and feasibility.

Further information on TSIA is available at

<http://www.tsia.org>

Previous computing projects by Burkhard Burow:

Since 1990, cfortran.h is a popular system for combining C/C++ and Fortran routines.

Since 1992, Funnel is the parallel/reliable/... batch system for the Monte Carlo event production of the ZEUS experiment at DESY in Hamburg, Germany. Funnel currently uses the otherwise-idle cycles of about 500 workstations spread across 15 institutes around the world.

Since 1995, Funnel also is the basis of FUL3, the MC production system for the L3 experiment at CERN.

Information : <http://consult.cern.ch/seminars>

Organise : G.Folger / IT

Thursday 6 May

TECHNICAL PRESENTATION

at 10.30 hrs – IT Auditorium, bldg 31/3-004-5

Presentation of VERITAS NetBackup

by Peter Baur / Technical Director, Software- Qualitaet-Leistung (SQL) A.G.

Agenda:

- Short Intro SQL AG
- Short overview VERITAS Software Inc.
- Who is Veritas
- Short overview Veritas Vision (a complete Solution)
- Veritas SAN Concept
- Veritas NetBackup
- Architecture
- Master/Slave concept
- Administration Issues
- Reporting
- Media Management

VERITAS NetBackup provides enterprise backup and recovery for organizations that require a high speed, flexible and easily managed solution.

VERITAS NetBackup's central management console and highly scalable architecture enables the backup and recovery solution to continually meet the changing need of the modern IT environment. By ensuring the reliability of backup images VERITAS NetBackup becomes a critical part of any disaster recovery data availability scenario. By providing support for a wide variety of platforms including all the major UNIX systems, Windows NT, Novell Netware, PC workstations and VMS, VERITAS NetBackup can be used as a centralized solution for large heterogeneous environments scaling from a few to many thousands of nodes all managed from a single console. VERITAS NetBackup is the chosen backup and recovery solution for many Global 2000 organizations and offered to enterprise customers by major hardware vendors such as Sun, Hewlett Packard and Bull S.A.

Organiser : S. Cannon / IT / 75036

Thursday 6 May

THURSDAY SEMINAR

at 14.00 hrs – TH Conference Room, bldg 4

Kaon matrix elements with Domain Wall Quarks on the Lattice

by A. SONI

Domain wall quarks (DWQs) are a promising new formulation of lattice QCD which preserve the full chiral symmetries of the continuum theory even at a finite lattice spacing in the limit that the number of sites (N_s) in a fictitious 5th direction approaches infinity. Our numerical simulations have demonstrated that important symmetries are maintained to a high degree of accuracy for a modest size (N_s of about 10 to 20) for lattice gauge couplings (b) around 6.0. Furthermore, discretization errors are $O(a^2)$ and the data to date suggests of mild dependence on the lattice spacing. We continue to refine our calculation of B_K and extend it to include matrix elements relevant for the Delta $S=1$ Hamiltonian for the K to $\pi\pi$ decays and the direct CP

violation parameter ϵ' . Light quark masses are also extracted. We use the non-perturbative renormalization procedure, proposed by the Rome group, to connect the lattice calculation using DWQ with the continuum.

Thursday 6 May

COMPUTING COLLOQUIUM

at 14.00 hrs – Main Amphitheatre

GNOME - a free desktop for GNU/Linux and other UNIX systems

by Miguel DE ICAZA / Instituto de Ciencias Nucleares, UNAM, Mexico

The GNOME project was started to create an entirely free desktop environment for free systems. One of the main objectives of GNOME is to provide a user friendly suite of applications and an easy-to-use desktop including features such as drag and drop. GNOME uses open standards such as CORBA and XML and uses the highly portable and free graphical toolkit GTK+ for GUI programming.

GNOME 1.0 was released after eighteen months of development in March of 1999. Following the style of development of the Linux kernel: releasing updates and fixes continuously: at the time of this writing, GNOME 1.0 is at version 1.0.8. GNOME 1.0 provides a wide range of applications including an image manipulation program (GIMP), a spreadsheet (Gnumeric) and a calendar tool.

This talk will describe the architecture of the GNOME project and look at it's history, present and what is to be expected in the near future.

About the speaker:

Miguel de Icaza is a system administrator at Instituto de Ciencias Nucleares, UNAM, Mexico. Miguel was one of the original founders of the GNOME project and is the primary author of Gnumeric and several other core GNOME components.

Thursday 6 May

LHC PROJECT SEMINAR

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

Radiation tests on electronics for the LHC machine

by Raymond RAUSCH / CERN-SL

Theoretical studies of the radiation level in the LHC tunnel have prompted the decision to install electronic equipment under the super conducting magnets. Following this decision, the LHC Technical Coordination Committee decided, in March 1998, to create a Working Group (RAD-WG) to do experiments in order to qualify electronic equipment. This seminar will present the reasons for installing electronics in the LHC tunnel and report on the results obtained so far. Three consecutive irradiation campaigns have been done during 1998, involving non powered electronic equipment in the North Experimental Area (TCC2) of the SPS Accelerator. Following these preliminary results, it was decided to create a permanent Radiation Test Facility for On-Line Radiation Measurements on electronic equipment. The infrastructure for this Radiation Test Facility, which has been installed during the SPS 1998/99 winter shut-down, is now fully operational. Sixteen experiments are taking data since the start-up of the SPS; some of these experiments will be described.

Friday 7 May

IT INFORMATICS TUTORIAL

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

Introduction to CGI Scripting

by Kiran PATEL / CERN-IT

Through the Common Gateway Interface, you can give your web pages access to CGI programs in order to generate dynamic information. These programs can be used to process information sent by visitors and tailor responses accordingly.

Among the topics covered in the presentation will be the understanding of the CGI environment, use of environment variables and the creating and processing of forms. Throughout the talk, examples will be used to demonstrate the various techniques.

The talk will be aimed at those who have basic understanding of Perl and UNIX, although this will not be essential.

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

Organisers: M.Marquina & R.Ramos /IT-User Support

Friday 7 May

MEETING ON PARTICLE PHYSICS PHENOMENOLOGY

at 14.00 hrs – TH Conference Room, bldg 4

The MSSM Higgs Sector: A guide for the next century Higgs hunter

by Carlos WAGNER / CERN - TH

I will present recent theoretical developments in the study of the properties of the Higgs sector of the MSSM. The comparison between the results of the two-loop diagrammatic calculation and the one-loop renormalization group improved effective potential computation of the lightest CP-even Higgs mass will be presented and the consequences for the upper bound on this Higgs mass will be discussed. I will identify regions of parameter space for which the couplings of the neutral Higgs bosons to tau-leptons and bottom-quarks may be strongly modified and important effects on the Higgs branching ratios into fermions and gauge bosons may be obtained. I will also analyse the effects of CP-violating phases in the Higgs boson masses and couplings to fermions and gauge bosons. The phenomenology of Higgs physics at LEP, the Tevatron and the LHC will be discussed in the light of these new studies.

Friday 7 May

CERN HEAVY ION FORUM

at 14.00 hrs – Conference Room, bldg 160/1-009

Hadronic probes show QGP in 158 A GeV pb+pb interactions

by Johann RAFELSKI / University of Arizona, Tucson

An analysis of (strange) hadron abundances and mt-spectra observed in 200 A GeV S-W/Pb and 158 Pb—Pb GeV interactions has been completed within the statistical Fermi model. It is necessary in such analysis to allow chemical non-equilibrium of strange and non-strange quark yields. The key results we obtained are in remarkable agreement with the properties of a deconfined QGP source hadronizing without chemical re-equilibration, and expanding just with the sound velocity of quark matter.

The universality of the physical properties at chemical freeze-out for S- and Pb-induced reactions points to a

common, presumably deconfined QGP-type primordial source of hadronic particles.

Work performed in collaboration with Jean LETESSIER of University Paris 7.

Supported by the U.S. Department of Energy grant DE-FG03-95ER40937.

Organisers: Yiota Foka & Ulrich Heinz

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

Mardi 11 mai

IT INFORMATICS TUTORIAL

14.00-16.00 h – Amphithéâtre IT, bât. 31/3-004

Introduction à Corel Draw et à Corel Photopaint

par Alberto PACE / CERN-IT

Corel Draw et Corel PhotoPaint sont deux programmes qui permettent de créer des images et dessins qui peuvent être ajoutés dans vos documents.

La présentation montrera, avec des nombreux exemples, comment on conseille d'utiliser Draw et PhotoPaint efficacement pour créer des diagrammes, des images ou des animations, et comment on peut ajouter ces dessins dans vos documents Word ou dans vos pages web en format JPEG, GIF et animated-GIF.

La présentation utilisera la version de Corel installée sur NICE 95 et NICE NT mais ne demandera aucune connaissance préalable ni du PC, ni de Windows. La plupart des informations qui seront données s'appliquent aussi à d'autres plateformes (UNIX et Macintosh) et à des installations de Corel faites par l'utilisateur (PC à la maison, etc.)

The presentation will be given in French. Questions in English will be answered in English.

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

Organisers: M.Marquina and R.Ramos /IT-User Support

Wednesday 12 May

PS SEMINAR

at 11.00 hrs – PS Auditorium, bldg 6/2-024

Accelerator Mass Spectrometry — a Versatile Tool for the Measurement of Long-lived Radionuclides

by Walter KUTSCHERA / VERA Laboratory, Institut für Radiumforschung und Kernphysik, University of Vienna, Austria

The use of long-lived radionuclides as a means to study our environment at large entered a new dimension when Accelerator Mass Spectrometry (AMS) entered the field. Counting atoms rather than decays increased the detection sensitivity by many orders of magnitude. This allows one to use many cosmogenic and anthropogenic radionuclides such as ^{10}Be , ^{14}C , ^{26}Al , ^{36}Cl , ^{41}Ca , ^{53}Mn , ^{59}Ni , ^{60}Fe , ^{81}Kr , ^{129}I , ^{205}Pb , ^{236}U , ^{244}Pu in ways never possible by decay counting. The talk will first describe the method of AMS using the Vienna Environmental Research Accelerator (VERA) as an example for a modern AMS facility, and then discuss various applications in the seven spheres of our environment: atmosphere, biosphere, hydrosphere, cryosphere, lithosphere, cosmospere, and technosphere.

Organiser: B. Autin/PS

Tuesday 18 May

CERN PARTICLE PHYSICS SEMINAR

at 16.30 hrs – Auditorium, bldg 500*

Superheavy elements

by Yuri OGANESSIAN / JINR, Dubna, Russia

A fundamental outcome of macro-microscopic theory is the prediction of an "island of stability" of superheavy elements beyond those previously discovered. We will report on experiments carried out in Dubna which seem to confirm this hypothesis. In the $^{48}\text{Ca} + ^{244}\text{Pu}$ reaction, the decay of a nucleus was observed as the sequential emission of 3 α -particles and spontaneous fission. The decay chain lasts about 34 min. It originates from the decay of a new superheavy nucleus, most probably $^{289}114$ ($T_\alpha \sim 20$ s), formed in the 3n-evaporation channel with a cross section of ~ 1 pb. In a second experiment, involving the $^{48}\text{Ca} + ^{242}\text{Pu}$ reaction, another decay chain was observed, lasting about 9 min and comprising one α -decay and spontaneous fission. It is related to the decay of the lighter isotope $^{287}114$ ($T_{s.f.} \sim 3$ min). The significant increase of the lifetime of the observed nuclei (by a factor of $\sim 10^6$) with respect to the lifetimes of the heaviest known nuclides may be considered as a direct experimental evidence of the existence of the "island of stability" of superheavy elements.

Organiser : Jasper Kirkby / EP Division

* Tea & coffee will be served at 16.00 hrs.

POUR INFORMATION/FOR INFORMATION

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Wednesday 5 May

SEMINAR ON PARTICLE PHYSICS

at 17.00 hrs – Auditoire Stückelberg

Tumorthérapie with relativistic ion beams

by G. KRAFT / GSI, Darmstadt

Beams of heavy-charged particles like protons or carbon ions represent the optimum tool for the treatment of deep-seated inoperable tumors: in contrast to the conventionally used photons the dose increases along with the penetration depth through the body, culminating in a sharp maximum at the end of the particle range. In order to achieve a precisely conform irradiation of the selected target volume, this maximum can be shifted in depth by energy variation and distributed laterally through magnetic deflection of the particle beam. Since carbon ions have a lateral scattering of only about 1 millimeter they offer the most conform irradiation.

In addition to this excellent physical selectivity the biological efficiency concerning cell killing increases towards the end of the carbon ions' range. Therefore, the increase in dose is potentiated by an increase in biological efficiency.

Finally, the stopping of the carbon ions can be monitored by tracing a small amount of β^+ -active ^{10}C and ^{11}C ions which are produced in nuclear reactions with atoms in the target volume. This β^+ distribution can be visualized by applying PET-techniques, thus allowing a good control of the beam range.

At GSI Darmstadt a heavy-ion therapy unit has been designed and constructed in collaboration with the Radio-logical Clinic and the DKFZ Heidelberg and the FRZ Dresden. The layout of this facility as well as the treatment of now more than 30 patients will be reported on. The proposal for the layout of a dedicated medical facility at Heidelberg will be presented.