

Friday 22 November
COMPUTING COLLOQUIUM

at 14.00 hrs – Auditorium

Scaling CMOS for High-Performance Processors
The next Ten Years

by Robert H. Dennard / IBM Watson Research Center

Vendredi 22 Novembre

SEMINAIRE POUR LES GUIDES DU CERN

à 16.00 h – Amphithéâtre

Accélérateurs de haute énergie en médecine

par Pierre MANDRILLON / Laboratoire du Cyclotron,
Centre A. Lacassagne, Nice

FOR INFORMATION / POUR INFORMATION

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Wednesday 13 November

PARTICLE PHYSICS SEMINAR

at 17.00 hrs – Stuckelberg Auditorium

**Measurement of the left-right $Zb\bar{b}$
coupling Asymmetry using Jet Charge at SLD**

by THOMAS JUNK/CERN

The parity-violating parameter A_b , the asymmetry between the left- and right-handed couplings of the b quark to the Z^0 boson, has been measured by analyzing the polarized forward-backward asymmetry of b quarks in $e^+e^- \rightarrow Z^0 \rightarrow b\bar{b}$. Data were taken at the Stanford Linear Accelerator Center (SLAC), with the Stanford Large Detector (SLD), which records the products of e^+e^- interactions at a center of mass energy $\sqrt{s} = 91.2$ GeV/ c^2 at the SLAC Linear Collider (SLC). The SLD/SLD experimental apparatus provides a unique and ideal environment for measuring electroweak asymmetries. Heavy flavor decays of the Z^0 were identified inclusively by taking advantage of the long lifetime of B hadrons, the small, stable SLD beam spot, and SLD's precise tracking detectors. The sign of the flight direction of the b quark in tagged events was determined using a momentum-weighted jet charge variable, in which the efficiency of correctly signing events was extracted from the momentum-weighted charge in the two hemispheres of each event. From the 1994–1995 sample of 3.6 pb $^{-1}$, having a luminosity-weighted average e^- polarization of 77.2 %, and the 1993 sample of 1.8 pb $^{-1}$, having a luminosity-weighted polarization of 63.1 %, the asymmetry parameter obtained is $A_b = 0.843 \pm 0.046(\text{stat}) \pm 0.051(\text{syst})$.

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SCIENCE POUR TOUS
par Rafel Carreras

Jeudi 14 novembre
à 13h.00 – Amphithéâtre

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LECTURE SERIES FOR
POSTGRADUATE STUDENTS

11, 12, 13, 14 & 15 November

11.00 to 12.00 hrs – Auditorium

Quantum Chromodynamics

by M. NEUBERT / CERN-TH

Quantum chromodynamics (QCD) is the fundamental theory of the strong interactions. It is a local, non-abelian gauge theory describing the interactions between quarks and gluons, the constituents of hadrons. In these lectures, the basic concepts and phenomena of this theory will be introduced in a pedagogical way. Topics will include : asymptotically free partons, colour and confinement; non-abelian gauge invariance and quantization; the running coupling constant; deep-inelastic scattering and scaling violations; the operator product expansion; chiral and heavy-quark symmetries. Some elementary knowledge of field theory, abelian gauge invariance and Feynman diagrams will be helpful in following the course.