

SEMINARS

SEMINAIRES

Monday 20 July

PPE SEMINAR

at 16.30 hrs – Auditorium

L3 results on large angle Bhabha scattering

by Jorg WENNINGER / Geneva University
(L3 Coll.)

The high resolution L3 electromagnetic calorimeter is an ideal detector for the study of processes involving electrons and photons. We will present results from the L3 experiment on large angle Bhabha scattering. This reaction is used to measure the axial and vector couplings of the electron to the Z^0 boson. Radiative events have been studied and compared with the predictions of Bhabha event generators.

Wednesday 22 July

THEORETICAL SEMINAR

at 14.00 hrs – TH Conference Room

Quantum mechanics in the light of quantum cosmology

by James B. HARTLE / UC, Santa Barbara

In the search for a theory of the cosmological initial condition, quantum mechanics must be applied to the Universe as a whole. For this the "Copenhagen interpretations" of cosmology are inadequate. This talk will describe joint work with Murray Gell-Mann on a more general quantum mechanical framework for the Universe as a whole. Within that framework a program for describing the ultimate origin in quantum cosmology of the "quasi-classical domain" of familiar experience and for characterizing the process of measurement will be described. We suggest that resolution of many of the interpretative problems associated with quantum mechanics is to be accomplished, not by further intense scrutiny of the subject as it applies to reproducible laboratory situations, but rather by an examination of the alternative histories of the Universe stemming from its initial condition and a study of the problem of quasi-classical domains.

Friday 24 July

MEETING ON PARTICLE PHYSICS PHENOMENOLOGY

at 14.00 hrs – TH Conference Room

Weak non-leptonic amplitudes beyond the factorization technique

by M. SHIFMAN / University of Minnesota

The rule of discarding $1/N$ in weak non-leptonic decays presents a longstanding puzzle in this branch of QCD. We combine old knowledge of QCD with the new ideas on heavy quarks in order to explain this rule theoretically. It becomes clear in what kinematics one can expect to get this rule and where the naive factorization might be more appropriate. A wide range of phenomenological implications is discussed.

Tuesday 28 July

DETECTOR SEMINAR

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

High-pressure gas ionisation calorimetry for the forward region in LHC experiments

by Sergei DENISOV / IHEP, Protvino

A hadron calorimeter, operated with gas at high pressure in the ionization mode, has been studied in a high energy beam of electrons and hadrons. The calorimeter uses a planar electrode geometry with a 4 mm ionization gap. A gas mixture of 95% Ar / 5% CF₄ at pressures up to 40 atm and a signal shaping of 40 ns was used. The dependence of the energy resolution on gas pressure, the relative response to electrons and hadrons and possible improvements in the signal noise ratio will be discussed. The calorimeter has intrinsically a very high radiation resistance. Applications of this concept to the energy measurement at very small angles in high luminosity collider experiments will be discussed.

Wednesday 29 July

PS SEMINAR

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

Recent advances in symbolic computing applied to accelerator physics

by B. AUTIN / CERN-PS

Modern symbolic computing languages are both powerful and user friendly, especially when the technique of functional programming is mastered; they provide a valuable tool in various fields of accelerator physics. Examples will be given in beam optics (low beta insertions), magnet technology (permanent quadrupoles), accelerator control (damping of coherent oscillations), and in dynamics of non linear systems (perturbative solution of Hamilton's equation to a conceptually arbitrary order).