

SEMINARS

SEMINAIRES

Wednesday 31 July

THEORETICAL SEMINAR

at 14.00 hrs - TH Conference Room

Cold dark matter: particles and cosmology

by V. BEREZINSKY / INFN, Laboratori Nazionali del Gran Sasso

Baryonic and cold dark matter (CDM) will be considered in the framework of cosmological models.

Can the status of CDM be changed considerably in the light of recent observations of baryonic DM in the halo? Cosmological arguments disfavor the "Baryonic Universe". The CDM density in most successful cosmological models is observations of baryonic DM in the halo? Cosmological arguments disfavor the "Baryonic Universe". The CDM density in most successful cosmological models is given by $\omega_{\text{CDM}} h^2 = 0.2 \pm 0.1$. The status of the three best motivated CDM candidates, *axion*, *axino* and *neutralino* will be reported.

The neutralino is considered within a supergravity model with radiatively induced EW symmetry breaking. The no-fine-tuning condition limits the neutralino mass to be below 200 GeV. The non-universality of soft-breaking mass terms is shown to enlarge the allowed region in the neutralino parameter space. The detectability of such a neutralino is discussed for both direct searches and indirect searches (through detection of high energy neutrinos from the Sun and Earth).

Friday 2 August

MEETING ON PARTICLE PHYSICS PHENOMENOLOGY

at 14.00 hrs - TH Conference Room

Zero recoil B-decay sum rules and the determination of $\bar{\Lambda}$ and λ_1

by Z. LIGETI / Caltech, Pasadena

Sum rules obtained from comparing the result of inserting a complete set of physical states in a time ordered product of *b*-decay currents with the operator product expansion were used to derive upper bounds on the $B \rightarrow D^*$ form-factor at zero recoil, and on the matrix element of the kinetic energy operator between *B* meson states, λ_1 . We

show that perturbative corrections significantly weaken these bounds. The heavy quark effective theory parameters $\bar{\Lambda}$ and λ_1 are also important for making reliable predictions for inclusive heavy hadron decays. The shape of the lepton spectrum in inclusive semileptonic $B \rightarrow X l \bar{\nu}_l$ decay is sensitive to these matrix elements, and we extract their values from CLEO data, together with $|V_{cb}|$, $\bar{m}_b(m_b)$, and $\bar{m}_c(m_c)$.

[This talk is based on hep-ph/9602262 (Phys.Lett. B375 p.327) and on hep-ph/9603314 (Phys. Rev. Lett. 77 p.20).]

Tuesday 6 August

CERN PARTICLE PHYSICS SEMINAR

at 16.30 hrs - Auditorium*

Recent Results on J/ψ , $\psi(2s)$ and χ_c from BES

by Yongsheng ZHU / IHEP, Beijing

Some recent results from the BES experiment at BEPC (Beijing) will be reported: glueball candidates in radiative J/ψ decays, J/ψ decay branching fractions, the production of pseudoscalar and tensor states recoiling against ϕ and ω mesons, studies of the $\psi(2s)$, and χ_c decays. The BES detector upgrade will also be presented.

* Tea & coffee will be served at 16.00 hrs.

Wednesday 7 August

PS SEMINAR

at 11.00 hrs - PS Auditorium

Beam Dynamics in Space Time with Space Charge

by Alexander DYMNIKOV / Universidad Complutense (Madrid)

The electromagnetic effects due to space charge introduce a fundamental complexity in particle dynamics especially at low energy where the beam blow-up has to be carefully controlled. A general relativistic matrix theory of particle motion along the curved reference trajectory of the beam is developed. The nonlinear equation of the beam envelope is derived and solved using a recursion which strictly conserves the phase space volume at each step of integration.