

SEMINARS SEMINAIRES

Monday 21 August

EP SEMINAR

at 16.30 hrs - Auditorium

Evidence indicating that meson and baryon formation are controlled by phase space and a linear confining quark potential

by C.D. BUCHANAN / UCLA

Using the relativistic string model for hadronization, we find that the two simple principles of longitudinal phase space on the hadron level and a linear confining quark potential as expressed by the 'Wilson Area Law' (a combination of principles from which the Lund Symmetric Fragmentation Function can be derived) describe a great deal of e^+e^- annihilation data without the need for the many (typically quark-level) parameters such as s/u , vector/All, qq/q , $(su/ud)/(s/u)$, $1/3(qq)_1/(qq)_0$, etc. that are commonly used. Baryon formation is introduced in a way which is naturally required by the model. Using only 2-3 parameters, we find good agreement with 15-20 measured meson and baryon multiplicities and longitudinal distributions at $E_{cm} = 29$ GeV and at 10 GeV. At 29 GeV, our model predicts that a baryon and antibaryon are typically separated by ≈ 1.5 mesons in rank. Predictions are extrapolated to 60 GeV (TRISTAN) and 90 GeV (SLC/LEP). Further tests of the model are discussed.

Wednesday 23 August

THEORETICAL SEMINAR

at 14.00 hrs - TH Conference Room

The Z line-shape in e^+e^- annihilation

by L. MAIANI / University of Rome 1
'La Sapienza'

I discuss the shape of the total (electromagnetically inclusive) cross-sections : $e^+e^- \rightarrow \mu^+\mu^-$ (+ soft photons) $e^+e^- \rightarrow$ hadrons (+ soft photons) around the Z resonance. It is shown that in a general, renormalizable theory one can parametrize the cross-sections in terms of a few physical parameters (mass, width ...) in a way which is independent of the high energy behaviour of the theory itself. Standard Model predictions for the parameters (to one loop) are discussed and the cross-section computed in this way is compared to already existing calculations.

Friday 25 August

MEETING ON PARTICLE PHYSICS
PHENOMENOLOGY

at 11.00 hrs - TH Conference Room

Considerations concerning the renormalization of the electroweak sector of the standard model

by A. SIRLIN / New York University

Simple physical arguments suggest natural choices for the renormalization conditions to be satisfied by the renormalized self-energies of the electroweak theory. The corresponding propagators exhibit a simple behaviour as $q^2 \rightarrow 0$ and near the Z^0 resonance. The formulation is then applied (in collaboration with G. Degrassi) to discuss the electroweak corrections to $e^+e^- \rightarrow \mu^+\mu^-$. The question of gauge invariance is illustrated in the analogous case of ν -fermion scattering. Two gauge-invariant definitions of $\sin^2\theta_W$ which absorb unknown top and Higgs dependences are discussed. One of them is a fundamental parameter of the theory and would be nice to measure.

TRAINING AND EDUCATION ENSEIGNEMENT

SUMMER STUDENT LECTURES

This week

Mon. 21 August	09.00	P. Grieder	High energy neutrino astronomy and astrophysics (1)
	10.30	P. Grieder	High energy neutrino astronomy and astrophysics (2)
Tue. 22 August	09.00	--	--
	10.30	A. Linde	Self-reproducing universe