SEMINARIO
Departamentos de Física Teórica I y II
Universidad Complutense de Madrid

INVITADO: Gauhar Abbas

Centre for High Energy Physics, Indian Institute of Science, Bangalore (India)

TITULO: **"A new RG-summation method for extraction of α_S from hadronic τ-decays"**

LUGAR: FACULTAD DE CIENCIAS FÍSICAS UCM
DÍA: 16 de mayo, 2012 (Miércoles)
HORA: 14:30
AULA: Seminario Depto. Física Teórica II, Planta 2ª

ABSTRACT

We provide a new determination of strong coupling $\alpha_s(M_{\tau^2})$ using an improved fixed-order perturbation theory based on the explicit summation of all renormalization-group accessible logarithms, proposed sometime ago in the literature. In this approach, the powers of the coupling in the expansion of the QCD Adler function are multiplied by a set of functions D_n, which depend themselves on the coupling and can be written in a closed form by iteratively solving a sequence of differential equations. We find that the new expansion has an improved behaviour in the complex energy plane compared to that of the standard fixed-order perturbation theory (FOPT), and is similar but not identical to the contour-improved perturbation theory (CIPT). With five terms in the perturbative expansion we obtain in the MS scheme ás (Mô) = 0.338 ± 0.010.