Department of Theoretical Physics

Special Free Meson Seminar

Speaker	:	Mridupawan Deka (Institute of Mathematical Sciences, Chennai)
Topic	:	First and second moments of nucleon's parton distribution functions for the sea and valence quarks from lattice QCD
Day, Date & Time	:	Thursday, January 13, 2011 at 11:00 a.m.
Place	:	Theoretical Physics Seminar Room (A304)

Abstract

The talk will address the study of the first and second moments of the parton distribution functions, particularly those of the sea partons, inside a nucleon. This requires the computation of both the connected and disconnected insertions in Lattice QCD. This has been carried out on a $16^3 \times 24$ quenched lattice with Wilson fermion. The quark loops are calculated with Z_2 noise vectors. Unbiased subtractions and multiple nucleon sources have been used to reduce the statistical errors. We obtain 5 σ signals for $\langle x \rangle$ for the u, d, and s quarks, but $\langle x^2 \rangle$ is consistent with zero within errors.

(Nilmani Mathur)