Department of Theoretical Physics

Free Meson Seminar

Speaker	:	Indrakshi Raychowdhury (S. N. Bose National Centre For Basic Sciences, Kolkata)
Topic	:	Prepotential formulation of
Topic	:	lattice gauge theories
Day, Date & Time	:	Thursday, April 11, 2013 at 2:30 p.m.
Place	:	AG 69

Abstract

The reformulation of gauge theories in terms of loops is an old problem in physics. We define prepotential operators for Hamiltonian lattice gauge theory to address the issues regarding the loop formulation. In terms of the prepotentials all the loops as well as associated Mandelstam constraint can be defined locally at each site of the lattice. Moreover these constraints can be solved exactly to construct local orthonormal loop basis. The dynamical issues are also analyzed within this approach. Prepotentials also play an important role in calculating the spectrum of the theory exactly (for a small lattice) as well as perturbatively (both in the weak coupling and strong coupling regime).

(Nilmani Mathur)