Open Talk

7th February, 2020   **10:00 AM**   **Fermion**

SPEAKER
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TITLE OF THE TALK
Local, gauge invariant formulation of Gauge theory

ABSTRACT

Showing that the fundamental excitations of non-abelian gauge theory are massive is an important problem (mass gap problem). Gauge invariance itself prevents gluons (we will focus on pure gauge theory without fermions) from having mass as such a mass term break gauge invariance. But, gauge invariance doesn't prevent gauge invariant fields from having mass. Therefore it is useful to construct a formulation of gauge theory in terms of gauge invariant fields. Starting with the Standard Hamiltonian formulation of SU(2) gauge theory on the lattice due to Kogut and Susskind (Which I will introduce in some detail), we will see how a complete set of local gauge invariant operators and states can be constructed by using Schwinger bosons. We will then see how to describe dynamics in a mean field approximation by constructing a gauge invariant path integral.

HOST FACULTY
Professor Manu Mathur
Department of Theoretical Sciences
S. N. Bose National Centre for Basic Sciences

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