

INDIAN ASSOCIATION FOR THE CULTIVATION OF SCIENCE

2A & 2B, Raja S.C. Mullick Road, Jadavpur, Kolkata-700032, India

Seminar Notice

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School of Physical Sciences

Title:	Phenomenology of a GUT inspired Extension of the Standard Model.
Speaker:	Anindya Datta, University of Calcutta, Kolkata
Date:	March 30, 2022 (Wednesday)
Time:	16:00 Hours (IST)
Venue:	Physics Seminar Room (C-406), 3rd Floor, Centenary Building, IACS
Abstract:	In this talk, I will discuss a variant of Left-Right symmetric model based on $SU(3)_C \times SU(2)_L \times U(1)_L \times SU(2)_R \times U(1)_R$ gauge group. Symmetry breaking leads to several neutral and charged massive gauge bosons apart from the SM W and Z. The Large Hadron Collider (LHC) results for the search of heavy gauge bosons can be used to constrain the vacuum expectation values responsible for giving masses to these extra heavy gauge bosons. I will discuss the constraints on the masses of some of these scalars from the existing LHC data. We keep, in our model, all the fermions present in the 27-dimensional fundamental representation of E_6 from which the aforementioned gauge group may arise after two step breaking of the former. Mass limit of one such exotic lepton has also been derived from present LHC data. It is noted that some of these neutral exotic lepton or neutral scalar bosons of this model can serve the purpose of a cold dark matter. I will also show some results from relic density calculation in such a model.

All are cordially invited to attend the seminar