



INDIAN ASSOCIATION FOR THE CULTIVATION OF SCIENCE

2A & 2B, Raja S. C. Mullick Road, Jadavpur, Kolkata-700 032

School of Physical Sciences

SEMINAR NOTICE

- Title : Exotic LHC signatures for partial compositeness**
- Speaker : Dr. Avik Banerjee, Department of Physics, Chalmers University of Technology, Gothenburg, Sweden.**
- Date : September 14, 2022 (Wednesday)**
- Time : 16:00 hours (IST)**
- Venue : Physics Seminar Room (C-406), 3rd Floor, Centenary Building, IACS**

Abstract:

Composite Higgs models together with partial compositeness, predict the existence of new scalars and vector-like quarks (VLQ) around the TeV scale. Generically, the presence of these additional scalars opens up new decay topologies for the VLQs. In this talk I will first review the fundamental idea of the partial compositeness and, then demonstrate how to systematically construct a general low energy Lagrangian to capture various features arising in this class of models. I will present the current status of the VLQ search at the LHC, their limitations and scope for extensions. Finally, I will focus on a concrete model based on $SU(5)/SO(5)$ coset and show that the VLQs in this model can have significant branching ratios to the additional scalars and a third generation quark, compared to the usual Standard Model channels.

All are cordially invited to attend the seminar.