

INDIAN ASSOCIATION FOR THE CULTIVATION OF SCIENCE

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

Seminar Notice

Org. by

School of Physical Sciences

Title:	CoDEx: a bridge between new physics and SMEFT
Speaker:	Supratim Das Bakshi, Department of Physics, IIT Kanpur
Date:	July 11, 2019 (Thursday)
Time:	11:30 a.m.
Venue:	Physics Seminar Room (C-406), 3rd Floor, Centenary Building, IACS
Abstract:	Effective Field Theory (EFT) is the key to new physics when there is a lack of experimental data to determine the pattern of new physics beyond SM. In this technique, UV theories are probed at low energy by incorporating higher mass dimension (>4) operators along with the renormalizable Lagrangian. The Wilson coefficients (WC's) which appear along with their respective effective operators encapsulate the footprints of the heavy degrees of freedom integrated out from the given UV theory. CoDEx is a Mathematica package that integrates out these heavy fields from the given UV theory. It calculates the effective dimension-5, and dimension-6 operators, and the associated Wilson coefficients up to 1-loop level. This algorithm is generic and is equally applicable for spin-0, 1/2 and 1 fields with any other quantum numbers. CoDEx can generate effective operators in both Warsaw and SILH bases. It also allows renormalization group evolution of the effective operators in Warsaw basis using the supplemented anomalous dimension matrix for SMEFT.

All are cordially invited to attend the seminar