

INDIAN ASSOCIATION FOR THE CULTIVATION OF SCIENCE
2A&B, Raja S.C. Mullick Road, Jadavpur, Kolkata-700032, India

Seminar Notice

Org. by

Theoretical Physics Department

Title:	Can measurements of 2HDM parameters provide hints for high scale SUSY?
Speaker:	Ipsita Saha, Theoretical Physics Dept., National Institute for Nuclear Physics(INFN), Rome, Italy
Date:	January 3, 2018 (Wednesday)
Time:	3:30 p.m.
Venue:	Theoretical Physics Seminar Room (C406), 3rd Floor, Centenary Building, IACS
Abstract:	<i>Two-Higgs-doublet models (2HDMs) are minimal extensions of the Standard Model (SM) that may still be discovered at the LHC. The quartic couplings of their potentials can be determined from the measurement of the masses and branching ratios of the extra scalars. In this talk, I will explain how the evolution of these couplings through renormalization group equations can determine whether the observed 2HDM is a low energy manifestation of a more fundamental theory. For instance, the minimal supersymmetric extension of the SM (MSSM), which fixes the quartic couplings in terms of the gauge couplings at some high-scale, can provide a predictive structure for the scalar masses and mixings at the weak scale. Running the 2HDM quartic couplings to higher scales, one can check if they converge to their MSSM values, and more interestingly, whether one can infer the supersymmetry breaking scale. This strategy could be applied to any theory whose ultraviolet completion unambiguously predicts all scalar quartic couplings.</i>

All are cordially invited to attend the seminar