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:	**N=2 heterotic string compactifications on orbifolds of K3×T**
Speaker:	**Aradhita Chattopadhyaya, CHEP, I.I.Sc.,Bangalore**
Date:	**January 17,2017 (Tuesday)**
Time:	**03:00 p.m.**
Venue:	**Theoretical Physics Seminar Room (R/No.-C406), 3rd Floor, Centenary Building, IACS**
Abstract:	We study ${\cal N}=2$ compactifications of $E_8\times E_8$ heterotic string theory on orbifolds of $K3 \times T^2$ by g' which acts as an $\mathbb{Z}_N$ automorphism of $K3$ together with a $1/N$ shift on a circle of T^2. The orbifold action g' corresponds to the 26 conjugacy classes of the Mathieu group M_{24}. We show that for the standard embedding the new supersymmetric index for these compactifications can always be decomposed into the elliptic genus of $K3$ twisted by g'. The difference in one-loop corrections to the gauge couplings are captured by automorphic forms obtained by the theta lifts of the elliptic genus of $K3$ twisted by g'. We then investigate all the non-standard embeddings for $K3$ realized as a $T^4/\mathbb{Z}_\nu$ orbifold with $\nu = 2, 4$ and g' the $2A$ involution. We show that for non-standard embeddings the new supersymmetric index as well as the difference in one-loop corrections to the gauge couplings are completely characterized by the instanton numbers of the embeddings together with the difference in number of hypermultiplets and vector multiplets in the spectrum. *Talk is based on arxiv 1611.01893 to accepted in JHEP.*

All are cordially invited to attend the seminar