



Department of
Theoretical Physics

THE QUANTUM SPACETIME SEMINAR SERIES

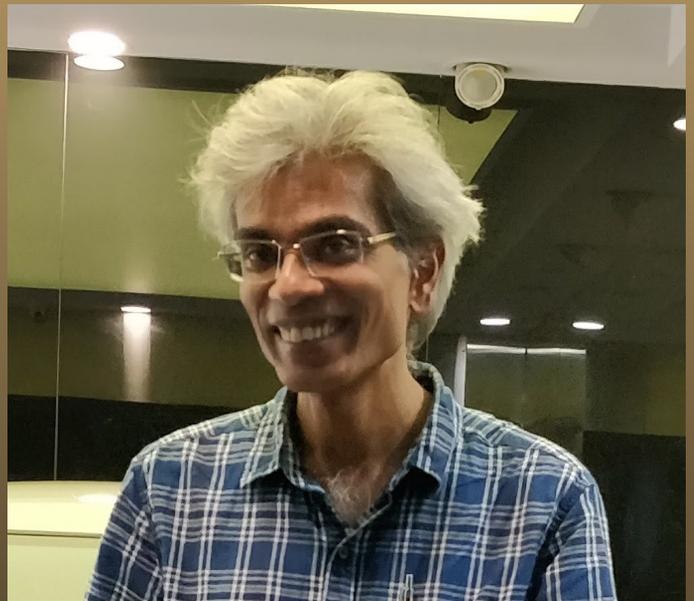
Applications of moonshine in string compactifications and black holes

Justin David
(IISc, Bangalore)

Date : 12th Nov., 2018

Time : 11.30 am

Venue: A-304, TIFR



The discovery of Mathieu moonshine in the elliptic genus of $K3$ allows the construction of twisted elliptic genera to every conjugacy class of the Mathieu group M_{23} . We show how these twisted elliptic genera play an important role in both $N=2$ and $N=4$ string compactifications. In $N=2$ string compactifications they point to the existence of a class of Calabi-Yau geometries. In $N=4$ compactifications they are inputs to degeneracies of $1/4$ BPS states, which at large values of charges are black holes. We then study properties of these states at small values of charges which provide insight to their geometric description as black holes.