



EINLADUNG

im Rahmen des Seminars für Mathematische Physik
(Joint TU/UV Theory Seminar)

zum Vortrag

von

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über

***„Number theoretic aspects of black hole entropy
in 4d string compactification“***

Abstract:

In this talk, We shall look at the relation between the dyon (black hole) counting prescription in $N = 4$, $d = 4$ string theory from a macroscopic and microscopic point of view and the underlying number theoretic/algebro-geometric framework. From the macroscopic perspective for $N = 4$ theories, these dyonic BH degeneracies are extracted via the localization technique in $N = 2$ superconformal gravity while from the microscopic theory, these degeneracies are encoded in the Fourier expansion of certain automorphic forms. For the case of $N = 4$ in which a subset of the quarter BPS dyons are prone to wall crossing, there is a number theoretic prescription for capturing the exact dyon/BH degeneracies of those quarter BPS states that do not decay via a Jacobi-Fourier decomposition and the Hardy-Ramanujan-Rademacher circle method. However, we shall see that for an exact match of degeneracies, there are many subtle arguments to look at in the heterotic frame. We then look to generalize this machinery to congruence subgroups of $SL(2, \mathbb{Z})$.

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