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E I N L A D U N G

im Rahmen des Seminars für Mathematische Physik

zum Vortrag

von

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über

„Abundant sets of internal spaces for string theory"

Abstract:
String model building usually relies on compactification on a Calabi-Yau (CY) threefold or involves a construction known as F-theory which combines the data of the internal space and of some background fields into those of a CY fourfold.
The most fertile construction method for CY manifolds comes from a branch of algebraic geometry known as toric geometry, where families of CY n-folds are associated to (n+1)-dimensional polytopes that have a certain property called reflexivity.
I will explain the concepts introduced above. Then I will outline how we managed to classify all 476,800,776 reflexive 4-polytopes almost 20 years ago, thereby creating what is still the world's largest list of CY threefolds.
Finally I will report on recent work on the classification of a particular class of reflexive 5-polytopes (there are 322,383,760,930), which resulted in the largest existing database for CY fourfolds.

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gez.: S. Fredenhagen, D. Grumiller, D. Erkinger, R. Wutte