Universität Hamburg
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Fakultät für
Mathematik, Informatik
und Naturwissenschaften

Kolloquium über Reine Mathematik

Einladung zu einem Vortrag

Dienstag, 15. Mai 2018

17 Uhr s.t., Geom H4

Prof. Dr. Pelham Wilson
(University of Cambridge)

Boundedness questions for Calabi-Yau threefolds

Abstract:
We consider (simply connected) smooth Calabi-Yau threefolds. A hard unsolved problem is whether such threefolds form a bounded family, that is fall into a finite number of algebraic families. A slightly weaker question is whether they form a bounded family up to birational equivalence. These properties would in turn imply for instance that the Euler characteristic for Calabi-Yau threefolds was bounded. By results of Gross elliptically fibred Calabi-Yau threefolds do form a birationally bounded family; no such result is known even for fibre spaces over the projective line with generic fibre a K3 or abelian surface.

One can split the general problem into two parts; whether or not Calabi-Yau threefolds fall into a finite number of topological types, and whether or not Calabi-Yau threefolds of a given topological type form a bounded family. The first of these problems seems intractable whilst the second is hard but maybe tractable. In this talk I shall describe the background to these problems and some techniques and recent results in respect of the latter problem.

Vor dem Vortrag (ab 16.30 Uhr) stehen im Raum 327 Kaffee und Tee bereit.