



Kolloquium über Reine Mathematik

Einladung zu einem Vortrag

Dienstag, 25. Oktober 2022

17 Uhr, Geom H4

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(Universität Hamburg)

Topological Quantum Field Theories and what they know about 4-manifolds

Abstract:

This talk will start with an introduction to topological quantum field theories (TQFT) and their associated manifold invariants. I will give an overview over some families of TQFTs that occur 'in the wild', and whose manifold invariants range from classical bordism invariants to much more exotic looking quantum invariants. But how much manifold topology can a TQFT really see?

In the second part of the talk, I will outline a complete answer to this question for a broad class of TQFTs fulfilling a certain representation theoretic property. I will discuss various implications, such as the fact that oriented semisimple 4d TQFTs cannot see smooth structure, while there are unoriented ones which can.

This second part is based on arXiv:2001.02288 and arXiv:2206.10031, the latter joint with Christopher Schommer-Pries.

**Vor dem Vortrag (ab 16.30 Uhr) stehen im Foyer vor Hörsaal H4
Kaffee und Tee bereit.**