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Friedrich-Hirzebruch-Kolloquium

Manifolds, field theories and modular forms

Professor Dr. Peter Teichner (Max-Planck-Institut, Bonn)

15.12.2016, 16:00 Uhr, Hörsaal M 5

We will present a mathematical approach to classical and quantum field theories, in terms of smooth functors on geometric bordism categories. This allows the construction of classifying spaces for such field theories, and a number of deep analogies with algebraic topology arises in the super symmetric case: Locality of a QFT leads to Mayer-Vietoris sequences, central charge corresponds to the degree (or twist) of a cohomology class, gauged field theories arise in equivariant cohomology and quantization corresponds to push-forward maps. For very small space-time dimensions, we will explain how these analogies become theorems by identifying classifying spaces of field theories with those of de Rham cohomology respectively K-theory. We will report on joint work with Stephan Stolz and many others.

Im Anschluss an den Vortrag findet ein Empfang im Erdgeschoss des Fachbereichsgebäudes statt.

Fachbereich 10
Mathematik und Informatik
http://wwwmath.uni-muenster.de

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