

TRR 352 Colloquium

Sven Bachmann
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“A new bulk Z_2 invariant for interacting phases”

Tuesday, July 9, 2024, 4.15 pm

TUM Garching, Boltzmannstr. 3, room 00.10.011

Zoom:

<https://tum-conf.zoom-x.de/j/69828985430?pwd=gm4i0EaTQjh6wT2XwzEI2JMH2a7rw9.1>

Meeting ID: 698 2898 5430

Passcode: 843857

Abstract: The stability of topological indices of condensed matter systems in the presence of interactions is not expected to hold universally. In this colloquium, I will first discuss the mathematical setup of the classification of interacting phases. I will then focus on a new Z_2 -valued index for time-reversal invariant interacting fermions on infinite lattices and prove its topological stability. I will show that it generalizes the well-known Fu-Kane-Mele index of topological insulators, thereby proving its stability under large perturbations. This is joint work with Alex Bols and Mahsa Rahnema.