

# TRR 352 Colloquium

**Sven Bachmann**  
(UBC Vancouver)

**“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 Rahnama.