TRR 352 Talk

Sven Bachmann
(UBC Vancouver)

"Classifying loops of symmetry-protected states"

Wednesday, July 10, 2024, 4.00 pm

University of Tübingen, Mathematics Department, C3N14

Zoom:
https://zoom.us/j/94274376976?pwd=YVBvU2tNMTBXSGxGYVg4eUoyV1ZiQT09
Meeting-ID: 942 7437 6976
Kenncode: 929851

Abstract: The classification of states of quantum lattice systems is a well-defined mathematical endeavour which started with the discovery of the quantum Hall effect. In this talk, I will discuss the topology of a simple class, the so-called invertible states, which I will define. It is by definition a connected set, and we shall explore its further topological properties. Specifically, I will be interested in what can be identified with its fundamental group; Physically, this is about classifying cycles of physical processes, or pumps. I will present a classification of such loops of invertible state that have a local symmetry, which can be proved to be complete. This is joint work with Wojciech De Roeck, Martin Fraas and Tijl Jappens.