

Linear response and integers in many-body quantum mechanics

Sven Bachmann (University of British Columbia)

Abstract: In this talk, I will review some recent results on the validity of linear response theory for gapped many-body quantum systems. They lay the theoretical foundation for the proof of quantization of the Hall conductance given by Kubos formula. I will also discuss a possible many-body generalization of the 'index of projections' arising in the same context.

This is joint work with Alex Bols, Wojciech De Roeck and Martin Fraas.