1154-82-590 **Anton Kapustin***, California Institute of Technology, 1200 E California Blvd, Pasadena, CA 91125. *Coarse geometry and family invariants of gapped phases of quantum matter.*

Topological methods have had a dramatic effect on our understanding of gapped phases of quantum matter. In particular, gapped phases of free fermions have been classified using K-theory. In the case of systems without translational invariance, the relevant K-theory has been defined by J. Roe in the context of coarse geometry. After reviewing the connection between Roe's K-theory and free fermions, I discuss possible extensions to interacting gapped systems. I outline a construction of invariants of families of gapped systems which generalize the cohomology class of the Berry curvature. (Received September 07, 2019)