K-theory boundary maps in solid state physics

mardi 24 septembre 2024 09:30 (1 heure)

Using K-theory and cyclic cohomology to describe topological phases for solids gives us the possibility to describe various topological relations between physical systems by means of the boundary map in K-theory. The perhaps best known example of that is the bulk edge correspondence which equates the quantised Hall conductivity with the edge conductivity. I will try to give an overview of that.

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