

Examples

Taper

December 3, 2016

Abstract

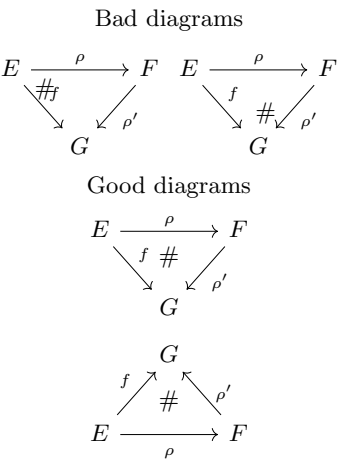
Nothing here.

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1 Nomenclature

2 Diagram



$$\begin{array}{ccccc} X & \xrightarrow{f} & Y & \begin{array}{c} \xrightarrow{g} \\ \xleftarrow{h} \end{array} & Z \\ \cup & & \cup & & \\ f^{-1}B & & B & & \end{array}$$

Or, with something "tikzset" in the preamble, we can

$$\begin{array}{ccc} X & \xrightarrow{f} & Y \\ \cup & & \cup \\ f^{-1}B & & B \end{array}$$

3 Table

Tentative Schedule:

Table 2: caption		Due date
#		
1.	Summarise the review paper	December, 2016
2.	Learn related mathematical tools (homotopy thoery, group cohomology, etc.)	April, 2017
3.	Play with toy models such as the 1D quantum walk model	Faburary, 2017
4.	Possible research topics:	July, 2017
4.1	classifying topological materials in new symmetry groups, such as the space groups;	
4.2	finding new ways to classify in the non-interacting picture;	
4.3	experiment about the effectiveness of existing;	As above
4.4	explorer approaches to the classification in interacting.	
	left	right
		left2

4 Anchor

References

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Nomenclature

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5 License

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Table 1: Classification			
<i>Symmetry</i>	<i>Spatial Dimension</i>	<i>Result</i>	<i>Other Keywords</i>
T	0	An intger: the number of particle-occupied Kramers doublet states	
T	1	None	
T	2	\mathbb{Z}_2	
T	3	\mathbb{Z}_2	3D crystals have additional $3\mathbb{Z}_2$ invariant \Rightarrow "weak topological insulators"
Q(?)	2	Characterized by μ in units of e^2/h	TKNN
Q(?)	even d	Topological invariant (k -th Chern number)	
Q(?)	0	number of single-particle states with negative energy ($E < E_F = 0$), which are filled with electrons.	
T& Q			
No T & No Q	0	\mathbb{Z}_2	
No T & No Q	1	\mathbb{Z}_2	"majorana chain"
No T & No Q	2	Topological number is integer.	Even-odd effects.