Recap :- # 6 terminal geometries

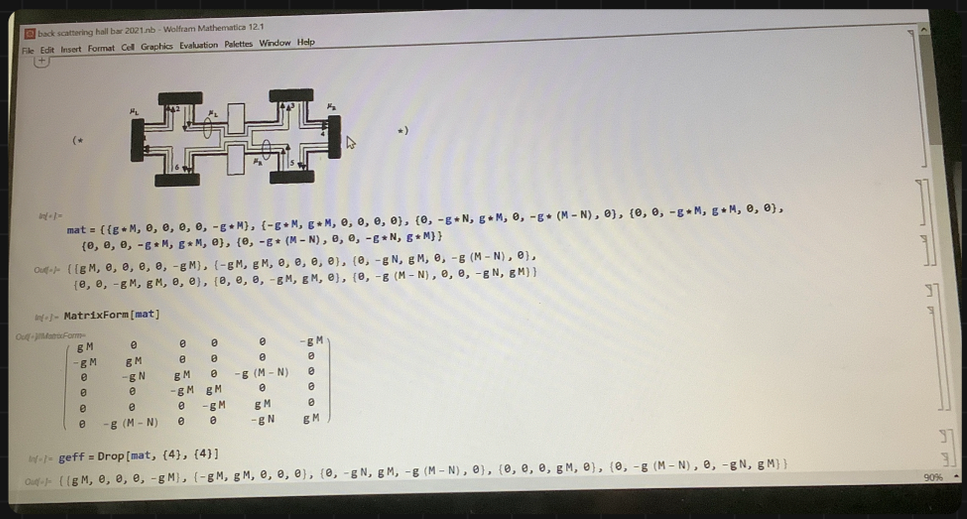
- $\vec{B}$ breaks time reversal symmetry
- recap of conductance matrix → sparse matrix
- local variation of density is possible.

2nd problem

- M-η states reflected back.
- newer matrix elements

reality of edge states

is it Gauge dependent ? ⇒ just makes solving the problem the easier.



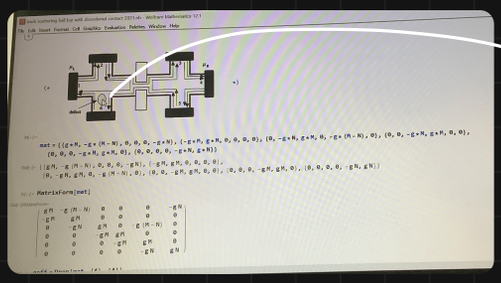
Set $V_4 = 0$ ⟶ sub matrix & invert it.

mean change ⟶ V_{23} , V_{56} → show role of partial scattering of edge states

V_{26} doesn't show any difference

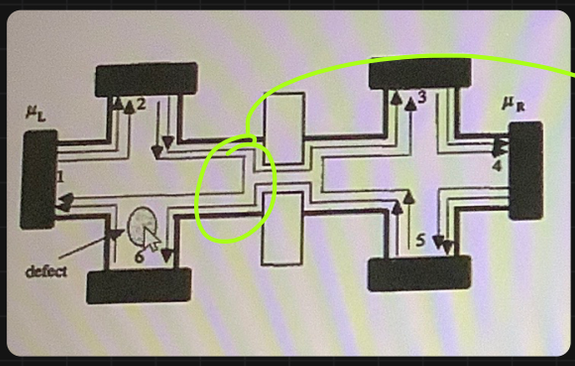
⇒ not a virtual problem → can put electrostatic gates to deplete the density

Disordered Contacts



→ a disorder changes the local density

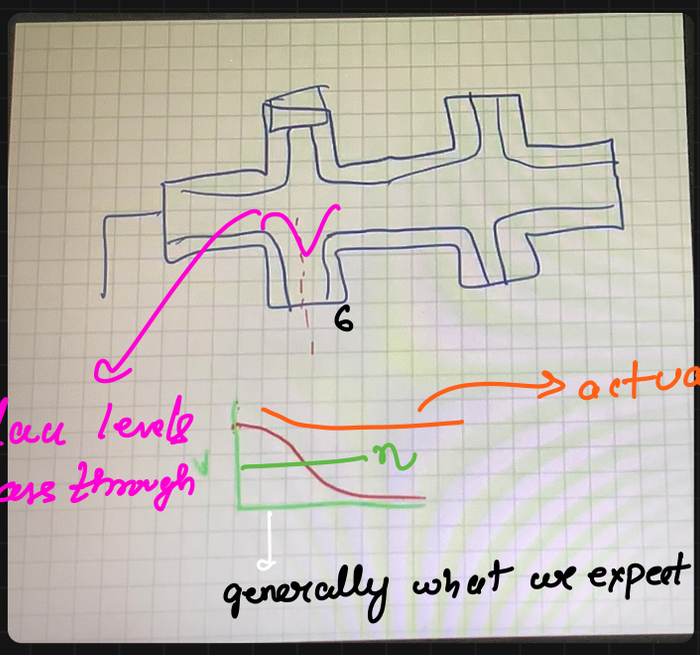
↳ doesn't allow an edge state to go through 6.



edge state can't go to site 6 [due to non-uniform density]

(Tip:- If you're using ipad & laptop, might wanna have screen of ipad onto laptop)

Physical picture



density diff.

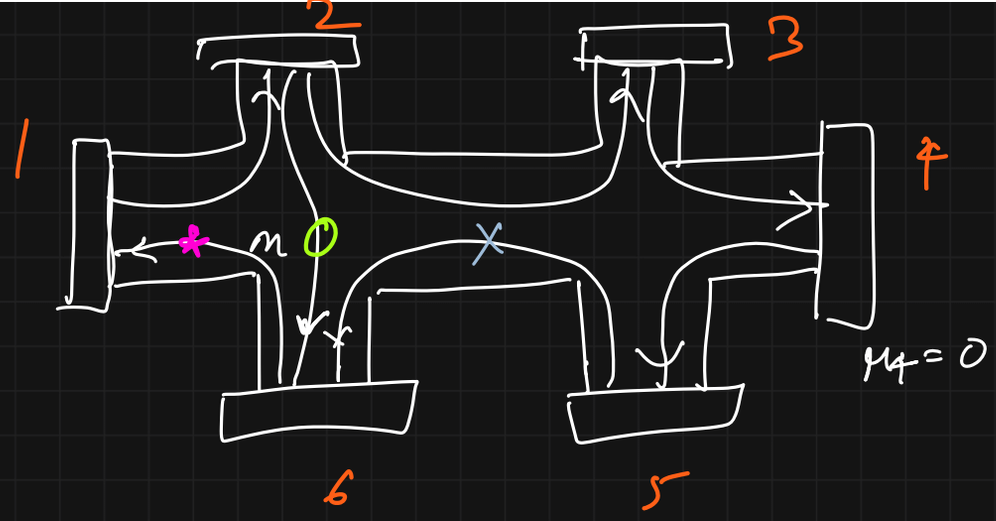
e.g. Schottky Barrier / p-n junction

Landau levels pass through

→ actually a local density of charges is different

generally what we expect at 6

Slightly deep idea of Landauer buttiker picture



edge states can force a terminal to float up in potential

comes with
X → μ_5
O → μ_2
* → goes with μ_6

→ these edge states are brought to the same potential

diff potential diff.

will get equilibriated at edges

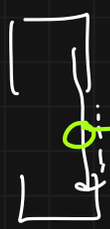
so we Assume full equilibration.

⇒ ϕ all edge states may/may not equilibriate.

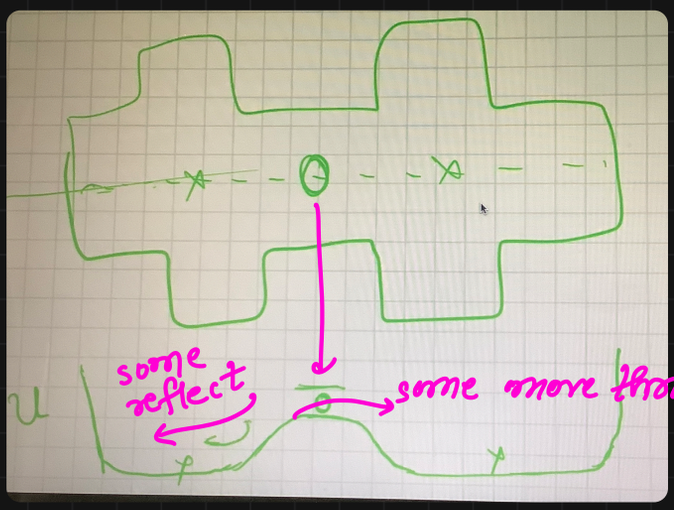
↳ FQHE → equilibriatⁿ isn't understood

↳ IQHE → mostly understood, but still not fully understood.

Doubt ⇒

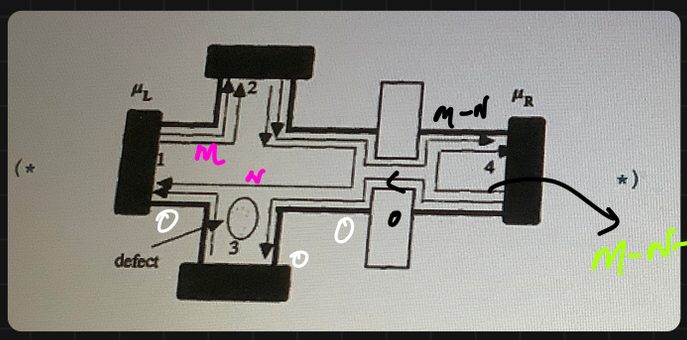


→ not traversing via the bulk but an edge. (more like a potential gradient)



Problem :-

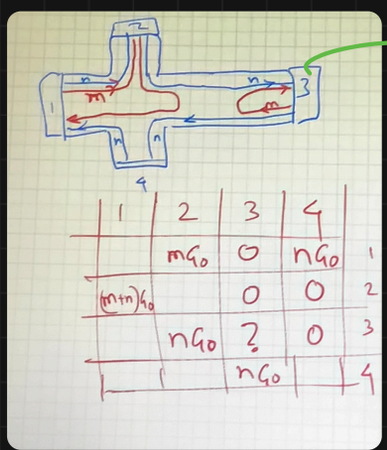
Problem Data 4.2



Gmatrix :-

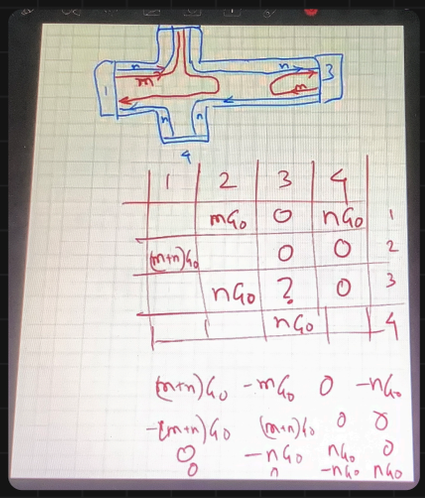
$$\begin{bmatrix} - & G_0N & G_0O & - \\ G_0M & - & - & - \\ - & - & - & G_0O \\ - & G_0(M-N) & - & G_0(M-N-O) \end{bmatrix}$$

Correct



→ m

→ because it starts ③ & ends at ③, it can be added with a $+mG_0$ & $-mG_0$



So the loop at 3 can be thought to exist "inside" 3.

Conclusion → # electrode enforce equilibration.

↳ absence of them will not will not allow equilibration