TU Delft

Soft constrained topological transition

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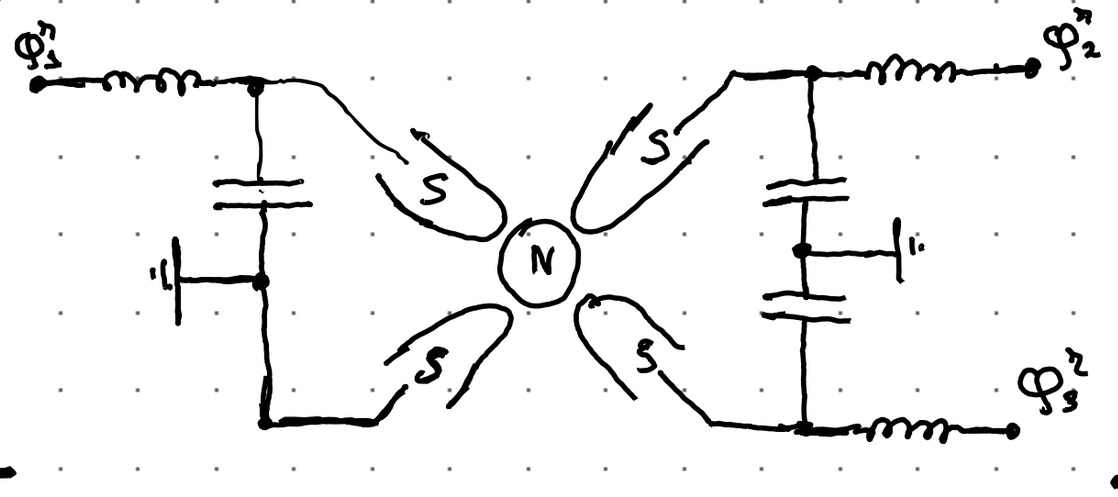
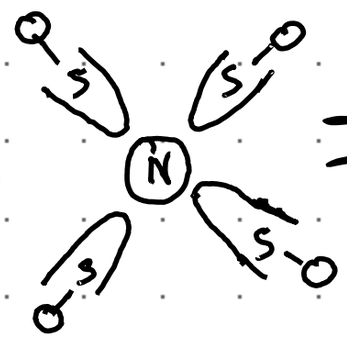
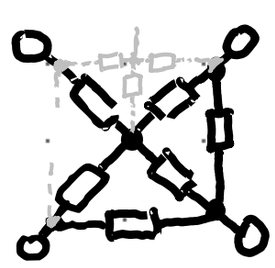
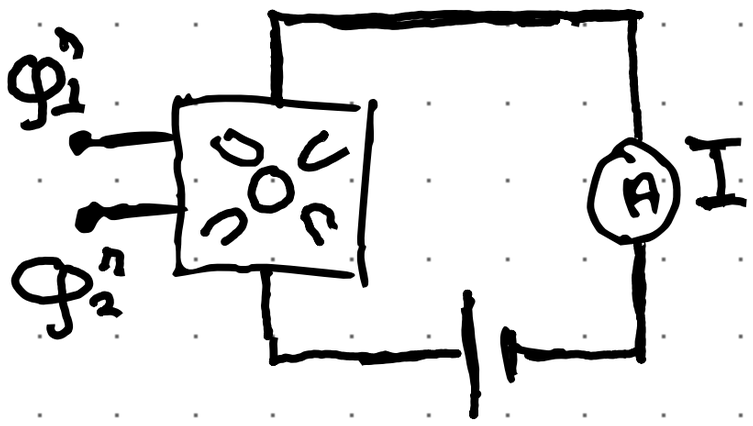
$$Z = \int \left\{ \right. \qquad \left. \right\} D\vec{\varphi}(\tau)$$

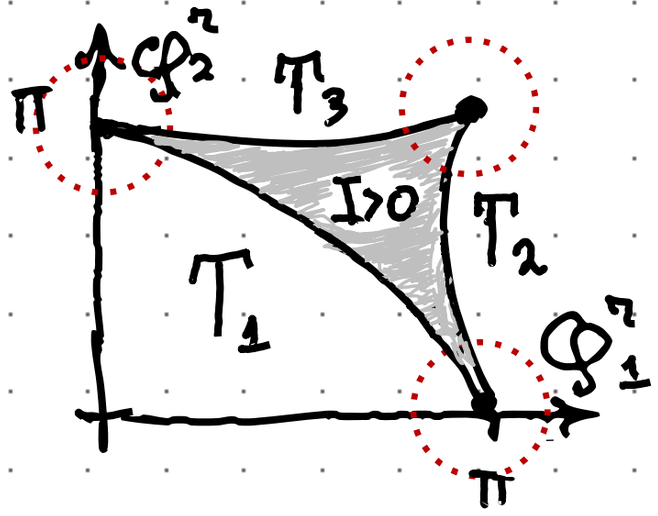


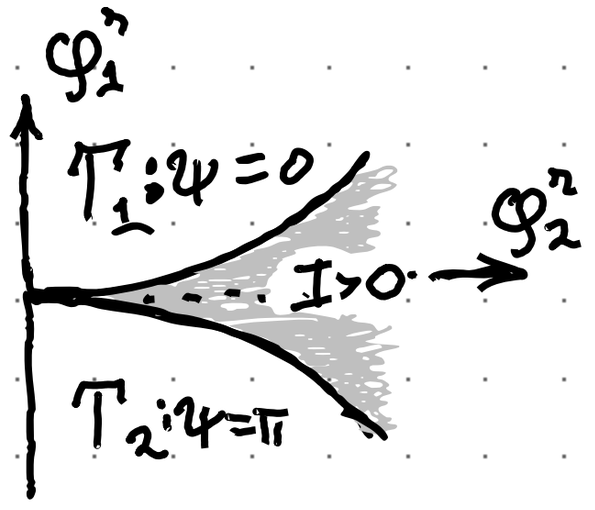
$$S_n = \quad = \quad = \frac{1}{2}\sum_{A}\sum_{B}\sum_{P} Tr\left\{\log\left[1+\frac{T_P}{4}(G_A G_B + G_B G_A - 2)\right]\right\}$$



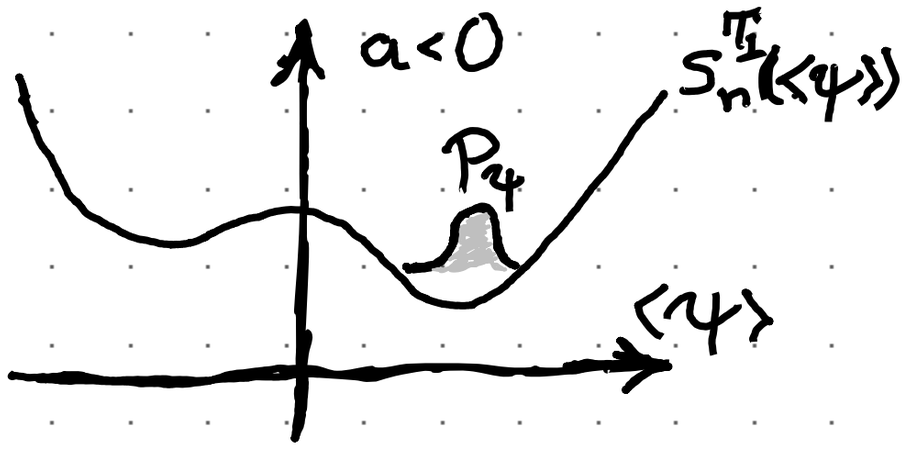


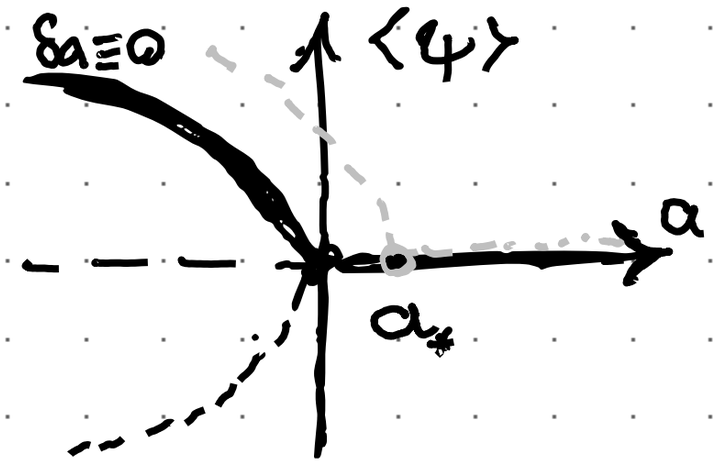






$$\Rightarrow S_n^{T_1} \simeq Tr\left[-2\varepsilon\Psi + \frac{1}{2}(a+\delta a)\Psi^2 + \frac{1}{4}b\Psi^4\right]$$





$$\langle S_n(a+\delta a, \psi)\rangle \overset{?}{=} S_n(a, \langle\psi\rangle) + \langle S_n^{(2)}\rangle(a, \langle\psi\rangle) \overset{?}{=} S_n(a_*, \langle\psi\rangle)$$

- Erdmanis, J., Lukcs, ., & Nazarov, Y. V. (2018). Weyl disks: Theoretical prediction. Physical Review B, 98(24)
- Huang, X. L. & Nazarov, Y. V. Topology protection-unprotection transition: an example from multi terminal superconducting nanostructures