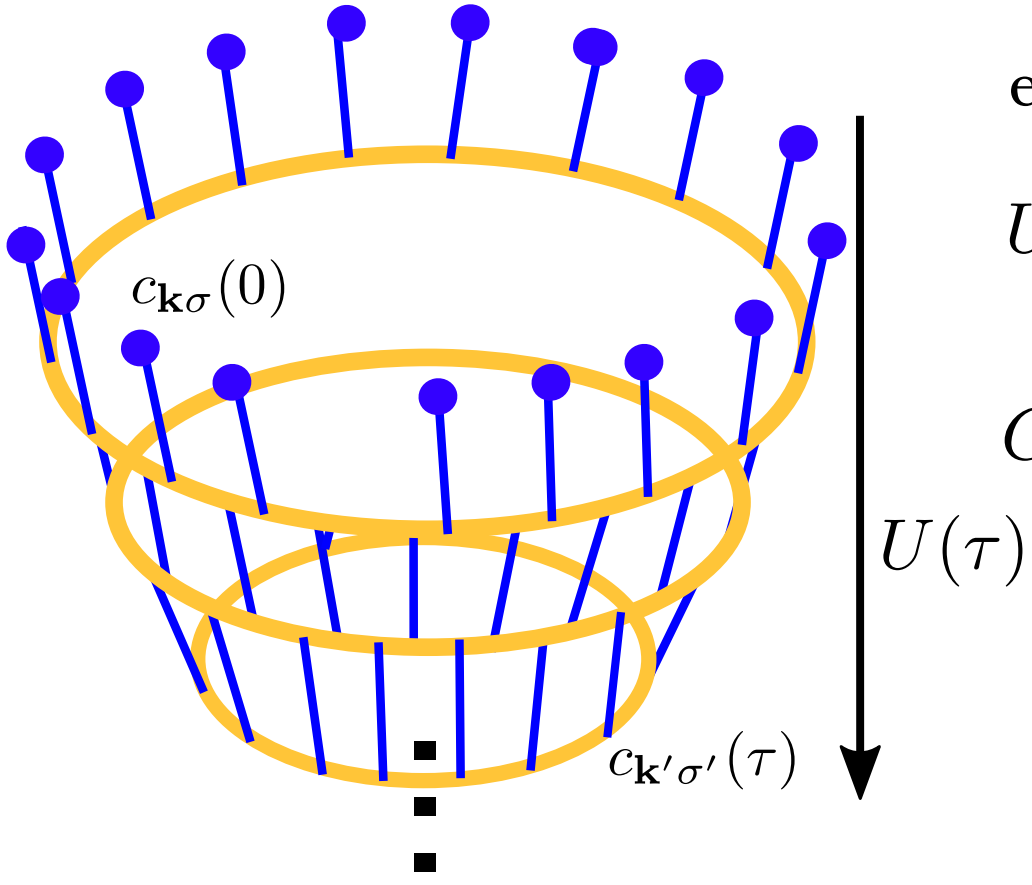
Studying EQL using TN

Properties of TN



Green Function based

$$c_{\mathbf{k}\sigma}(\tau) = U^{\dagger}(\tau) c_{\mathbf{k}\sigma} U(\tau)$$

equivalent RG time evolution

$$U(\tau) = \prod_{j=N}^{l} U_{(j)}, \tau = \frac{1}{v_F \Lambda_l}$$

$$G(\mathbf{k}\sigma, \tau) = \langle c_{\mathbf{k}\sigma}(\tau) c^{\dagger}_{\mathbf{k}\sigma}(\tau) \rangle,$$

1 electron green func.

Entanglement based

$$S_{\mathbf{k}\sigma}(\tau) = -Tr(\rho_{\mathbf{k}\sigma}(\tau) \ln \rho_{\mathbf{k}\sigma}(\tau)),$$

$$\rho_{\mathbf{k}\sigma} = Tr_{\bar{\mathbf{k}\sigma}}(|\Psi(\tau)\rangle\langle\Psi(\tau)|)$$

Entanglement entropy