Hamiltonian RG flow equation

H flow eqn.

$$\Delta H_{(j)} = \sum_{l=1}^{2n_j} \{ c_{j,l}^{\dagger} Tr_{j,l}\left(H_{(j)} c_{j,l}\right), \eta_{j,l} \}$$

ignored higher order correlated tangential scattering

Kondo coupling flow

$$\frac{\Delta J^{(j)}(\omega)}{\Delta \log \frac{\Lambda j}{\Lambda_0}} = \frac{n_j (J^{(j)})^2 \left[(\omega - \frac{\hbar v_F \Lambda_j}{2}) \right]}{(\omega - \frac{\hbar v_F \Lambda_j}{2})^2 - \frac{\left(J^{(j)}\right)^2}{16}}$$

Assumption

Circular Fermi surface(at low filling in 2d TB model).

Note the nontrivial appearance of coupling J in the denominator. This is a nonperturbative effect.