

### 3<sup>rd</sup> Exercise 12.6.2015

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#### Self-consistent solution

Consider a channel with one spin-degenerate level coupled to source and drain with  $\gamma_D = \gamma_S = 0.005$  eV. Fix  $\mu_S = 0$ ,  $\varepsilon = 0.2$  eV, and  $T = 300$  K. Fix  $C_D/C = 0.5$  (c.f. eq. (1.15) in the script). Obtain and plot the current and the number of electrons in the channel depending on the voltage.