

Expectations for Exercises

These exercises build on one pre-recorded videos that you should work with first. As always, do not hesitate to ask for help.

1 Exercises for Induced Polarization

1.1 Induced Polarization represented as RC circuit

In the video we have shown the solution to step-response when the current source is suddenly switched on. For that example we looked at the differential equation:

$$I_s = \frac{1}{R}U + C\frac{dU(t)}{dt}$$

in which I_s stems from a constant current sources as is the case for the resistivity method. The initial condition is the $U(t=0)=0$. Use separation of variables and show that:

$$U(t) = I_s R (1 - e^{-\frac{t}{RC}})$$

is a correct solution.