

A capacitor discharge through a resistor/inductor can be described by the equation:

$$V(t) = c * (e^{-at} - e^{-bt})$$

The function find\_abc is used to determine the variables a, b, and c for this equation.

These variables will be defined such that the resulting curve will produce the following desired values (nomenclature in parentheses is used in the MATLAB code):  $t_{peak}$  (t\_Peak\_Desired),  $t_{Pulse\ Width}$  (PulseWidth\_Desired),  $V_{peak}$  (PulseAmplitude\_Desired), and  $V_{off}$  (Pulse\_Off\_Desired).

This code can use parallel processes (use\_Parallel). Set use\_Parallel=1 to use parallelized code or use\_Parallel=0 to not use parallelized code.

