Introduction to Machine Learning for Geosciences
GEO 371T/GEO 391
Homework1

Consider the following equation:

$$W(t) = A\left(e^{-t/\tau} - 1 + \frac{t}{\tau}\right), \tag{1}$$

where the parameters A and τ are constants.
Assignment:

1. Choose $A = 1, \tau = 1$, and plot $W(t)$ for $0 < t < 2$.
2. Generate several arrays $W_1, W_2, W_3, ...$ etc for different values of A and τ and plot them simultaneously on the same graph.
3. Change the colors and line styles of the lines. Add a legend and explore some other options that are available.
4. Load the experimental data **wt.csv**, fit the equation for $W(t)$ to this dataset using **curve_fit**. Plot the experimental data and the fitted curve together. What are the best-fitted values of A and τ?