PROJECT PROPOSAL

For our project, we will be looking at the rate of chemical reactions equation. To measure the rate of a chemical reaction we will examine the ratio between the amount of substance formed and the time it took to produce them.

For a simple reaction that converts A → B, the rate of the reaction is

$$\text{Rate} = \frac{\Delta[B]}{\Delta t} = -\frac{\Delta[A]}{\Delta t}$$

In the reaction A → B, A is consumed at a rate proportional to the concentration of A ($dA/dt = -k[A]$), which is the ordinary linear differential equation for exponential decay. With additional substrates and products, as well as catalysts that affect the rate of reaction, the differential equations that model the rate of reaction from reactants to products require additional information and terms but can typically be reduced to linear nonstiff DEQs that can be solved with MATLAB.