CTS8233W20

CST8233: Lab #10

Non-Linear regression

Objective

The objective of this lab is to familiarize the student with the theory topics covered in Week 9. Mainly, this lab focuses on **Non-Linear regression**

Earning

To earn your mark for this lab, each student should finish the lab's requirements share his run screen within our zoom meeting.

Discussion

The progress of a homogeneous chemical reaction is followed, and it is desired to evaluate the rate constant and the order of the reaction. The rate law expression for the reaction is known to follow the power function form

$$-r = kC^n$$

Use the data provided in the table to obtain n and k.

Table Chemical kinetics.

C	4	2.25	1.45	1.0	0.65	0.25	0.006
$-r$	0.398	0.298	0.238	0.198	0.158	0.098	0.048

Write C\C++ program that Find the model of progress of that chemical reaction.

To test your Program:

$k = e^{-1.5711} = 0.20782$ $\quad n = a_1 = 0.31941$

the model of progress of that chemical reaction is

$$-r = 0.20782 \times C^{0.31941}$$