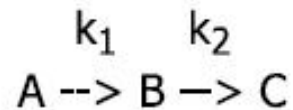


Problem Description

Plot the normalized concentration of the species for the reaction network of two irreversible, first-order reactions in series.¹



$$dC_A/dt = -k_1 C_A$$

$$dC_B/dt = k_1 C_A - k_2 C_B$$

$$dC_C/dt = k_2 C_B$$

$$C_A^0 + C_B^0 + C_C^0 = C^0 = C_A + C_B + C_C$$

$$C_A(0) = C_A^0, C_B(0) = C_B^0, C_C(0) = C_C^0$$

$$C_A / C_A^0|_{t=0} = 1$$

$$k_1 = k_2$$

¹ Davis, M.E. and Davis, R.J., Fundamentals of Chemical Reaction Engineering, pp. 37-40, Dover Publications, Inc., Mineola, New York, 2012