Deviation to the Arrhenius behavior

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The technique consists of the plot of ($\ln Y$) as a function of ($1/T$) and the use of linear least-squares fitting methods when the phenomenon obeys the Arrhenius linear behavior, where we obtained parameters (E_a/R) and ($\ln A_s$) are independent of temperature (https://doi.org/10.32388/WM2K0L).

Nevertheless, we observe can observe small deviation to the linearity. Based on the concave or convex nature of $\log(Y) \propto 1/T$, these deviations are generally classified into two: super-Arrhenius and sub-Arrhenius phenomenon, depending on the concave or convex nature of the $\log(Y)$ versus $1/T$ curves. They correspond to a decrease or increase in the activation energy as temperature increases, respectively, and for which the activation energy becomes temperature dependent.