| Symbol | Parameter | Units |
|---|---|---|
| $\mathbf{A}$ | Dynamic disordered kinetic design matrix | kJ mol$^{-1}$ |
| $E$ | Continuous form of $E_i$ | kJ mol$^{-1}$ |
| $E_i$ | Activation energy for component $i$ | kJ mol$^{-1}$ |
| $\mathrm{Fm}_f$ | $^{14}C/^{12}C$ of RPO fraction $f$, expressed as fraction modern | -- |
| $\mathbf{g}$ | Vector of $G(t)/G_0$ at each time point | -- |
| $g(t,E)$ | Continuous form of $g_i(t)$ | µgC |
| $G(t)$ | Mass of total carbon remaining at time $t$ | µgC |
| $G_0$ | Total initial mass of carbon | µgC |
| $g_0(E)$ | Continuous form of $g_{i,0}$ | µgC |
| $g_{i,0}$ | Initial mass of carbon in component $i$ | µgC |
| $g_i(t)$ | Mass of carbon in component $i$ remaining at time $t$ | µgC |
| $k_0$ | Arrhenius pre-exponential ("frequency") factor | sec$^{-1}$ |
| $k_i(t)$ | First-order rate constant for component $i$ at time $t$ | sec$^{-1}$ |
| $\mathrm{m}_f$ | Mass of carbon (as $CO_2$) contained in RPO fraction $f$ | µgC |
| $\mathbf{p}$ | Vector of $p_0(E)/\Delta E_l$ at each energy point | (kJ mol$^{-1}$)$^{-1}$ |
| $p(t,E)$ | Continuous form of $p_i(t)$ | -- |
| $p_0(E)$ | Continuous form of $p_{i,0}$ | -- |
| $p_{i,0}$ | Fraction of $G_0$ initially in component $i$ | -- |
| $p_i(t)$ | Fraction of $G_0$ in component $i$ at time $t$ | -- |
| $^{13/12}r(t)$ | Ratio of $^{13}C/^{12}C$ decay rate at time $t$ | -- |
| $\mathbf{R}$ | First derivative operator matrix | -- |
| $R$ | Ideal gas constant | kJ mol$^{-1}$ K$^{-1}$ |
| $T(t)$ | Temperature at time $t$ | K |
| $\beta$ | Temperature ramp rate | K sec$^{-1}$ |
| $\delta^{13}C_f$ | $^{13}C/^{12}C$ of RPO fraction $f$, expressed in per mille VPDB | ‰ |
| $^{13\text{-}12}\Delta E$ | $E$ difference between $^{13}C$- and $^{12}C$- containing compounds | kJ mol$^{-1}$ |
| $\Delta E_l$ | Activation energy step for point $l$ | kJ mol$^{-1}$ |
| $\Delta t_j$ | Time step for point $j$ | sec |
| $\omega$ | Regularization weighting factor | -- |