Gibbs Math

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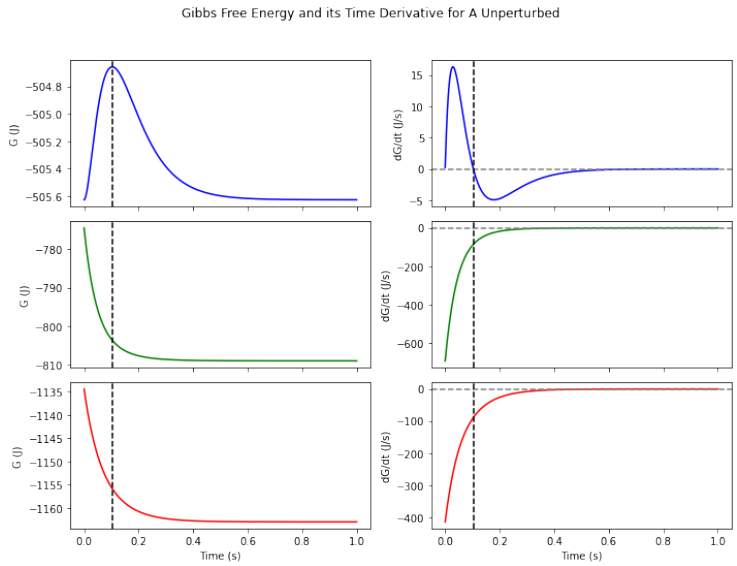
- $G = RT \sum_i \{c_i * [\ln(C_i/C_{i,eq}) - 1]\}$
- For a substance at Eq, $G = -RTc_{eq}$
- $\frac{dG}{dt} = -RT \sum_i \{r_s[\ln(r_s^+/r_s^-)]\}$

FOR $n = 3$

- $\leftarrow A \leftrightarrow B \leftrightarrow C \rightarrow$
- $r_1^+ = k_1^+ c_A \quad r_1^- = k_1^- c_B$
- $r_2^+ = k_2^+ c_B \quad r_1^- = k_2^- c_C$
- $r_3^+ = k_3^+ c_C \quad r_3^- = k_3^- c_A$
- Gibbs free energy: thermodynamic potential minimize by the chemical equilibrium. Maximum anount of work extracted via non volume expansion work
- Question, how does it relate to CPE?

- simple $n = 3$ example



- **OBSERVATIONS**
- The CPE point appears at the maximum of the Gibbs free energy associated with the unperturbed substance
- The gibbs free energy appears at the inflection point of the total gibbs free energy