

D T1

1) $\mu_{CaC_2}^S \quad \mu_{CaO}^S \quad P_{O_2} \quad P_{CO_2} \quad P, T \quad X = 6$

$$\left. \begin{aligned} \mu_{CaC_2}^S = 1 \quad \mu_{CaO}^S = 1 \quad P_{O_2} + P_{CO_2} = P \\ K = \frac{P_{CO_2}^4}{P_{O_2}^3 P^0} \end{aligned} \right\} Y = 4$$

N=2 le système est divariant; il suffit de fixer 2 paramètres parmi P_{O_2}, P_{CO_2}, P et T pour connaître les autres variables.

2) $P_{CO}, P_{O_2}, P_{CO_2}, P, T \quad X = 5$

$$\left. \begin{aligned} P_{CO} + P_{O_2} + P_{CO_2} = P \\ K = \frac{P_{CO_2} P^{1/2}}{P_{CO} P_{O_2}^{1/2}} \quad Y = 2 \end{aligned} \right\} \begin{aligned} \nu = 5 - 2 = 3 \\ \downarrow P_{CO} = 2 P_{O_2} \\ \nu' = 3 - 1 = 2 \\ \Rightarrow \text{divariant} \dots \end{aligned}$$

3) $\mu_{FeO}^S \quad \mu_{Fe_3O_4}^S \quad \mu_{Fe}^S \quad T, P$

$$\left. \begin{aligned} \mu_{FeO}^S = \mu_{Fe_3O_4}^S = \mu_{Fe}^S = 1 \quad K = 1 \end{aligned} \right\} \begin{aligned} \nu = 5 - 4 = 1 \\ \downarrow \nu' = 0 \\ \Rightarrow \text{invariant} \dots \end{aligned}$$

5) $\mu_{NiO}^S \quad P_{Ni_2} \quad P_{O_2} \quad P, T$

$$\left. \begin{aligned} \mu_{NiO}^S = 1 \quad P_{Ni_2} + P_{O_2} = P \end{aligned} \right\} \begin{aligned} \nu = 5 - 2 = 3 \\ \downarrow P_{Ni_2} = 2 P_{O_2} \\ T \text{ fixé} \\ \nu' = 1 \Rightarrow \text{monovariant} \end{aligned}$$

4) $\mu_G^S \quad [G(aq)] \quad P, T$

$$\left. \begin{aligned} \mu_G^S = 1 \quad K = \frac{[G(aq)]}{C^0} \end{aligned} \right\} \begin{aligned} \nu = 4 - 2 = 2 = \nu' \\ \Rightarrow \text{divariant} \dots \end{aligned}$$

6) $\mu_{N_2}^L \quad \mu_{H_2}^L \quad \mu_{(aqs)_2}^L \quad T, P \quad P_{N_2O_4} \quad P_{N_2} \quad P_{H_2O} \quad P_{CO_2}$

$$\left. \begin{aligned} K \quad \Sigma R = 0 \quad \mu^L = 1 \end{aligned} \right\} \begin{aligned} \nu = 7 - 3 = 4 \\ \downarrow P_{N_2} = \frac{P_{H_2O}}{2} \\ \text{et } \frac{P_{H_2O}}{n} = \frac{P_{CO_2}}{2} \\ \nu' = 2 \\ \text{divariant} \dots \end{aligned}$$

$$\textcircled{7} \quad P_{N_2}, P_{H_2O}, P_{CO_2} \Rightarrow X=7 \quad \left. \begin{array}{l} v=7-2 \\ v=5 \end{array} \right\}$$

$$\sum P_i = P \quad K = \frac{P_{CO_2}^2 P_{H_2O}^4 P_{N_2}^2}{P_{N_2H_2(CO_3)_2} P_{N_2O_4}^2 P_{O_2}^5} \Rightarrow Y=2$$

$$r: \quad \frac{P_{N_2}}{2} = \frac{P_{H_2O}}{4} \quad \text{et} \quad \frac{P_{CO_2}}{2} = \frac{P_{H_2O}}{4} \quad \left. \begin{array}{l} v'=5-2 \\ v'=5-3 \\ v'=2 \end{array} \right\}$$

$$\textcircled{+} \quad \frac{P_{N_2H_2(CO_3)_2}}{1} = \frac{P_{N_2O_4}}{2}$$

$$\textcircled{8} \quad T, P, x_c^S, P_{O_2}, P_{CO}, P_{CO_2} \Rightarrow X=6 \quad \Rightarrow \text{systeme divarié..}$$

$$x_c^S = 1 \quad \sum P_i = P \quad K_1 \quad K_2 \Rightarrow Y=4 \quad \left. \begin{array}{l} \\ \\ \end{array} \right\}$$

$$\text{Syst divarié } \in v=6-4=2=v'$$