JGL: $\Delta U = 0$

$U(T_f, V_f) = U(T_i, V_i)$ on $U_{GP} = U_{gp}(T)$

$$K = \left.\frac{\partial T}{\partial V}\right)_U = -\frac{(\partial U/\partial V)_T}{(\partial U/\partial T)_V} \qquad \left.\frac{\partial U}{\partial T}\right)_V = C_V$$

avec $dU = TdS - pdV$, $\left.\frac{\partial U}{\partial V}\right)_T = T\frac{\partial S}{\partial V} - p$

or $\left.\frac{\partial S}{\partial V}\right)_T = \left.\frac{\partial p}{\partial T}\right)_p$ et donc $K = -\frac{1}{C_V}\left(T\frac{\partial p}{\partial T} - p\right)$

$$= -\frac{1}{C_V}$$

$\chi_T = -\frac{1}{V}\left.\frac{\partial V}{\partial p}\right)_{T,m}$, $\beta = \frac{1}{p}\frac{\partial p}{\partial T}$, $\alpha = \frac{1}{V}\left.\frac{\partial V}{\partial T}\right)_{p,m}$

$d\ E_{p,i} = -\frac{m^2 a}{V^2} \cdot V = -\frac{m^2 a}{V}$

VdW: $\left(P + \frac{m^2 a}{V^2}\right)\left(V - mb\right) = mRT$

$dE_p = +\frac{m^2 a}{V^2} dV$ et $dU = C_V dT$

$dE_p + dU = 0 \Rightarrow C_V dT =$

On a alors $\boxed{U = C_v T - \frac{n^2 a}{V}}$ on va l'utiliser

$dU = TdS - MdH$ | iso energétique $\rightsquigarrow$ adiab reversible

$\left.\frac{\partial T}{\partial V}\right)_U \rightsquigarrow \left.\frac{\partial T}{\partial H}\right)_S$

$\Omega =$ $\quad$ $m = \frac{\alpha}{T} H$

$S = k_B \ln \Omega$

$\left.\frac{\partial S}{\partial H}\right)_T = \left.\frac{\partial m}{\partial T}\right)_H$ $\quad$ $\Delta S = \mu_0 \int_{H_1}^{H_2} \left.\frac{\partial m}{\partial T}\right)_H dH$

$du = \mu_0 H dm + T ds$ $\quad$ $\left.\frac{\partial m}{\partial t}\right)_H = -\frac{CH}{T^2}$

$du =$

$ds = \frac{C_H}{T} dT + \mu_0 \left.\frac{\partial m}{\partial T}\right)_H dH$

$$\boxed{= \frac{C_H}{T} dT - \frac{\mu_0 C H}{T^2} dH}$$