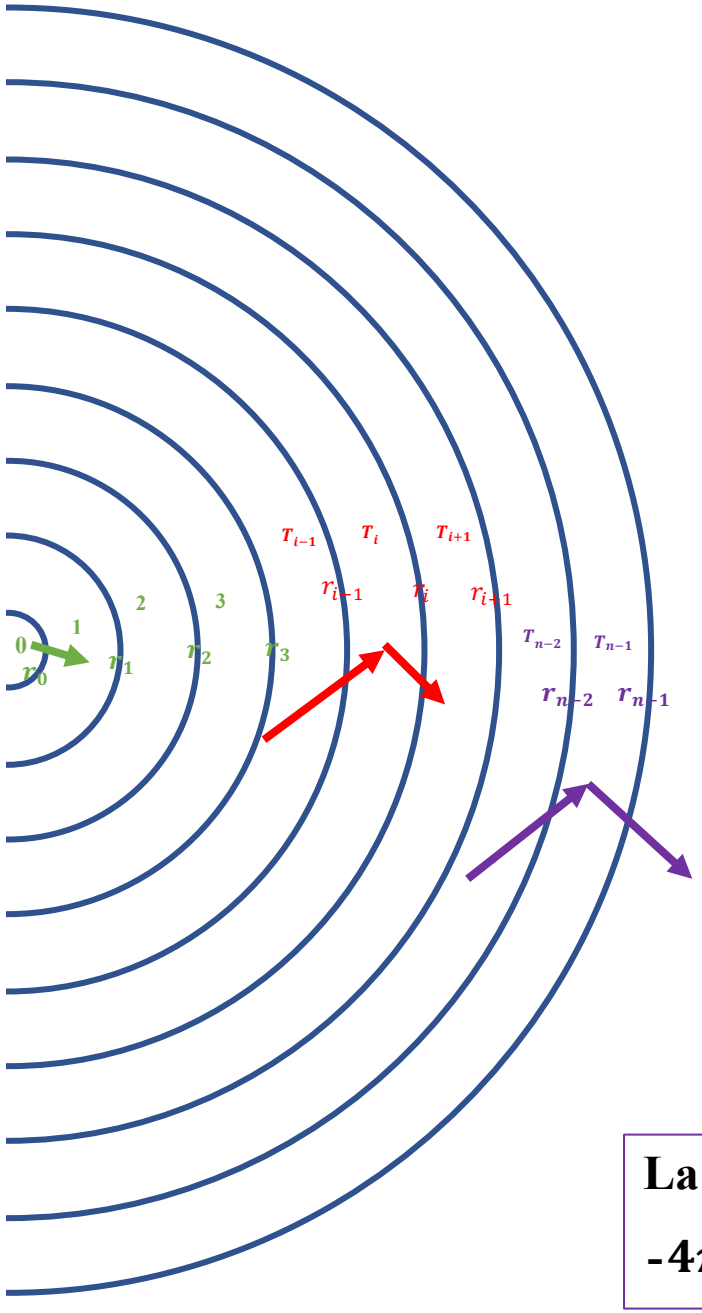

n couches= [0, 1, 2, 3, ..., n-1]

$T_{i-1} > T_i > T_{i+1}$

L'épaisseur de chaque couche = dr

$$r_0 = \frac{dr}{2}$$

$$r_i = \frac{dr}{2} + i * dr$$

$$r_{n-1} = \frac{dr}{2} + (n-1) * dr = R$$

La couche 0 :

$$- \frac{4\pi}{3} r_0{}^3 \rho * c_p \frac{dT}{dt} = \Phi_{out} = -4\pi r_0{}^2 \lambda \frac{T_1 - T_0}{dr}$$

La couche i :

$$-4\pi r_{i-1}{}^2 dr * \rho c_p \frac{dT}{dt} = \Phi_{out} = 4\pi r_{i-1}{}^2 * \lambda \frac{T_i - T_{i-1}}{dr} - 4\pi r_i{}^2 * \lambda \frac{T_{i+1} - T_i}{dr}$$

La couche n-1 :

$$-4\pi r_{n-2}{}^2 dr * \rho c_p \frac{dT}{dt} = \Phi_{out} = 4\pi r_{n-2}{}^2 * \lambda \frac{T_{n-1} - T_{n-2}}{dr} + 4\pi r_{n-1}{}^2 * h(T_{n-1} - T_\infty)$$