

$$\text{Soit } T_n = U_{n+1}^\alpha - U_n^\alpha$$

$$\begin{aligned} \text{Calculons } \frac{1}{n} \sum_{k=0}^{n-1} T_k &= \frac{1}{n} \sum_{k=0}^{n-1} (U_{k+1}^\alpha - U_k^\alpha) \\ &= \frac{1}{n} (U_n^\alpha - U_0^\alpha) \\ &= \textcircled{T_n} \quad \text{Pourquoi ?} \end{aligned}$$

Suite de l'exo

$$\frac{U_n^\alpha}{n} = T_n + \frac{1}{n} U_0^\alpha$$

$$\text{alors } \frac{U_n^\alpha}{n} \underset{n \rightarrow \infty}{\sim} T_n$$