$$f(x) = \frac{a_0}{2} + \sum_{1}^{\infty} (a_n \cos nx + b_n \sin nx).$$

La fonct f est periodique de periode T.

On sait que

si $0 \leq x \leq t$, $f(x) = \frac{x}{t}$

si $t \leq x \leq T$, $f(x) = \left(\frac{1}{t-T}\right) x - \frac{T}{(t-T)}$

$$a_0 = \frac{1}{T} \int_0^T f(x)\, dx$$

$$a_k = \frac{1}{T} \int_0^T f(x) \cos kx \, dx$$

$$b_k = \frac{1}{T} \int_0^T f(x) \sin(kx)\, dx$$

$$a_0 = \frac{1}{T} \left[\int_0^t f(x)\, dx + \int_t^T f(x)\, dx \right]$$

$$= \frac{1}{T} \left[\int_0^t \frac{x}{t}\, dx + \int_t^T \left(\left(\frac{1}{t-T}\right) x - \frac{T}{(t-T)} \right) dx \right.$$

$$a_k = \frac{1}{T} \left[\int_0^t \frac{x \cos kx}{t}\, dx + \int_t^T \left(\left(\frac{1}{t-T}\right) x - \frac{T}{(t-T)} \right) \cos kx \, dx \right]$$

$$b_k = \frac{1}{T} \left[\int_0^t \frac{x \sin kx}{t}\, dx + \int_t^T \left(\left(\frac{1}{t-T}\right) x - \frac{T}{(t-T)} \right) \sin kx \, dx \right]$$