Fonction de transfert en z d'un processus analogique bloqué et échantillonné

$G_a(p)$	$G_e(z) = \dfrac{z-1}{z}\, Z\left[\dfrac{G_a(p)}{p}\right]$
$\dfrac{1}{Tp}$ $\dfrac{1}{(Tp)^2}$ $K\dfrac{1}{1+Tp}$	$\dfrac{\Delta}{T}\,\dfrac{1}{z-1}$ $\qquad z_0 = e^{-\Delta/T}$ $\dfrac{1}{2}\left(\dfrac{\Delta}{T}\right)^2 \dfrac{z+1}{(z-1)^2}$ $K\,\dfrac{1-z_0}{z-z_0}$
$K\dfrac{1}{1+Tp}\,e^{-pn\Delta}$ $\quad n$: entier $K\dfrac{1}{1+Tp}\,e^{-p\tau}$ $\tau < \Delta \qquad \tau = (1-m)\Delta$	$K\,\dfrac{1-z_0}{z-z_0}\,z^{-n}$ $K_1\,\dfrac{z-\alpha}{z-z_0}\,z^{-1}$ avec $\begin{cases} \alpha = \dfrac{z_0 - z_0^m}{1-z_0^m} \\ K_1 = K(1-z_0^m) \end{cases}$
$\dfrac{1}{T'p(1+Tp)}$	$\dfrac{\dfrac{\Delta}{T'}(z-z_0) - \dfrac{T}{T'}(z-1)(1-z_0)}{(z-1)(z-z_0)} = \dfrac{K_1(z-a)}{(z-1)(z-z_0)}$ $K_1 = \dfrac{\Delta - T(1-z_0)}{T'}\ ;\ a = \dfrac{z_0(\Delta/T) - (1-z_0)}{(\Delta/T) - (1-z_0)}$
$\dfrac{1}{(1+T_1p)(1+T_2p)}$	$1 + \dfrac{T_1T_2}{T_1-T_2}\left(-\dfrac{1}{T_2}\,\dfrac{z-1}{z-z_1} + \dfrac{1}{T_1}\,\dfrac{z-1}{z-z_2}\right)$ $\begin{cases} z_1 = e^{-\Delta/T_1} \\ z_2 = e^{-\Delta/T_2} \end{cases}$
$\dfrac{1}{1 + 2\xi\dfrac{p}{\omega_n} + \left(\dfrac{p}{\omega_n}\right)^2}$ on posera $\omega_p = \omega_n\sqrt{1-\xi^2}$ on a $0 < \xi < 1$	1ère forme : $\dfrac{b_1z + b_0}{z^2 + a_1z + a_0}$ avec : $a_0 = e^{-2\xi\omega_n\Delta}$, $a_1 = -2\sqrt{a_0}\cos(\omega_p\Delta)$ $b_0 = a_0 + \sqrt{a_0}\left[\xi\dfrac{\omega_n}{\omega_p}\sin(\omega_p\Delta) - \cos(\omega_p\Delta)\right]$, $b_1 = 1 - \sqrt{a_0}\left[\xi\dfrac{\omega_n}{\omega_p}\sin(\omega_p\Delta) + \cos(\omega_p\Delta)\right]$. 2ème forme : $\dfrac{b_1z + b_0}{(z-z_1)(z-z_1^*)}$ $z_1, z_1^* = e^{-\xi\omega_n\Delta}\,e^{\pm j\omega_p\Delta}$