$$\frac{G(n)}{N} = \frac{32,4\,n + 3240}{n(n-2,16)(n+2,37)} = \frac{A}{n} + \frac{B}{(n-2,16)} + \frac{C}{(n+2,31)}$$

$$A = \frac{3240}{(-2,16)\cdot(2,37)} = -649,3506$$

$$B = \frac{32,4\cdot2,16 + 3240}{2,16\,(2,76 + 2,37)} = 342,8788$$

$$C\,\emptyset = \frac{32,4\cdot(-2,37)+3240}{(-2,31)(-2,31-2,16)} = 306,5378$$

$$\frac{G(n)}{n} = -\frac{649,3506}{n} + \frac{342,8788}{n-2,16} + \frac{306,5378}{n+2,31}$$

$$Z\left\{\frac{G(n)}{3}\right\} = \frac{-649,3506}{1-3^{-1}} + \frac{342,8788}{1-e^{2,16T}\cdot3^{-1}} + \frac{306,5378}{1-e^{-2,31T}\cdot3^{-1}}$$

$$\frac{-649,3506\,(1-e^{2,76T}\cdot3^{-1})\cdot u + 342,8788\cdot e\cdot u + 306,5378\cdot c\,\alpha}{(1-3^{-1})(1-e^{2,16T}\cdot3^{-1})(1-e^{-2,31T}\cdot3^{-1})}$$

Para T = 0,011

$a = (1 - 1,0218 \cdot z^{-1})$ $\qquad$ C. $(1 - z^{-1})$ $\qquad$ b.c $= 1 - 1,9772 \cdot z^{-1} + 0,9772 \cdot z^{-2}$

$b = (1 - 0,9772 \cdot z^{-1})$

a. b $= 1 - 1,999 \cdot z^{-1} + 0,9985 \cdot z^{-2}$

$G(z) = \dfrac{-649,3506 + 1298,0518 \cdot z^{-1} - 648,3785 \cdot z^{-2} + 342,8188 - 677,8213 \cdot z^{-1} + 335,0025 \cdot z^{2}}{}$

somando os 2 primeiros:

$- 306,5318 + 620,2305 \cdot z^{-1} - 313,3760 \cdot z^{-2} + 306,5318 - 618,7460 z + 313,2412$

final then:

$$G(z) = \frac{0,4845 \cdot z^{-1} - 0,1618 \cdot z^{-2}}{1 - 1,999 \cdot z^{-1} + 0,9985 \cdot z^{-2}}$$

Em (z)

$\qquad$ acima deu 0,4857 e 0,1619

$$G(z) = \frac{0,4845 \cdot z - 0,1618 \cdot}{z^{2} - 1,999 \cdot z + 0,9985}$$

ajuste num $\qquad$ meu $\downarrow$ $\qquad$ Com maior error (computacional) $\downarrow$

$\qquad$ $0,3227 \cdot z$ $\qquad$ ou $\qquad$ $0,3233 \cdot z$

$\qquad$ $\qquad$ $\qquad$ $\qquad$ $\qquad$ $\qquad$ $\rightarrow$ maior erro

$$G(z) = \frac{0,4857 \cdot z - 0,1618}{z^{2} - 1,999 z + 0,9985} \qquad \Big/ \qquad corr = \frac{0,3238 \cdot z}{z^{2} - 1,999 \cdot z + 0,9985}$$

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$$\zeta = \frac{|\ln(0,3)|}{\sqrt{\pi^2 + \ln^2(0,3)}}$$

$$\zeta \geqslant 0,3578$$

$$\zeta \geqslant 0,3579 \qquad \frac{4}{0,3573 \cdot 93}$$

$$\omega n > 3,7026\cancel{94}$$

$$\omega_n > 3,7265$$

Polos dominantes

$$\zeta = 0,5$$

$$\omega_n = 5$$

$$\eta_{1,2} = -\zeta \omega_n \pm j \omega_n \sqrt{1 - \zeta^2}$$

$$\eta_{1,2} = -2,5 \pm j 4,3301$$

$$Z_{1,2} = e^{-\eta_{1,2} \cdot T} = e^{-2,5 \cdot 0,01} \cdot e^{\pm j 4,3301 \cdot 0,01}$$

$$Z_{1,2} = e^{-0,025} \cdot e^{\pm j 0,0433}$$

$$Z_{1,2} = 0,9753$$