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ERRATUM TO "MODELING AND DESIGN OF A FAST-DYNAMIC RESPONSE PHASE-LOCKED LOOP BASED ON MOVING AVERAGE FILTER"

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In the mentioned paper [1], in page 117 (Section III-B), equation (11) and consequently the development of (12) are incorrect. The correct equations are next presented.

$$\exp\left(-sT_n\right) \cong \frac{\displaystyle\sum_{m=0}^{p} \frac{(2p-m)!\,p!}{(2p)!\,m!\,(p-m)!}\left(-sT_n\right)^m}{\displaystyle\sum_{m=0}^{p} \frac{(2p-m)!\,p!}{(2p)!\,m!\,(p-m)!}\left(sT_n\right)^m} = \frac{P_p\left(sT_n\right)}{P_p\left(-sT_n\right)} \cdot \quad (11)$$

The correct MAF transfer function with the Padé approximation is:

$$F_{MAF}(s) = \frac{\displaystyle\sum_{m=0}^{p} \frac{(2p-m)!\,p!}{(2p)!\,m!\,(p-m)!}\left(sT_n\right)^m - \sum_{m=0}^{p} \frac{(2p-m)!\,p!}{(2p)!\,m!\,(p-m)!}\left(-sT_n\right)^m}{sT_n \displaystyle\sum_{m=0}^{p} \frac{(2p-m)!\,p!}{(2p)!\,m!\,(p-m)!}\left(sT_n\right)^m}$$

$$F_{MAF}(s) = \frac{P_p\left(-sT_n\right) - P_p\left(sT_n\right)}{sT_n \cdot P_p\left(-sT_n\right)} \cdot \qquad (12)$$

The previous equations were used to develop the models and to achieve the simulated and experimental results presented in [1].

REFERENCE

[1] F.O. Martinz, R. Destro, N.R.N. Ama, K.C.M. de Carvalho, W. Komatsu, L. Matakas Junior, "Modeling and design of a fast-dynamic response Phase-Locked Loop based on Moving Average Filter", *Revista Eletrônica de Potência*, vol. 25, no.1, pp. 114–124, March 2020. http://dx.doi.org/10.18618/REP.2020.1.0003.