

Erratum

 Erratum to “A new feedback control of a modified Chua’s circuit system”
 [Physica D 92 (1996) 95–100]¹

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In [1], there are some errors which need to be corrected as noted in [2].

The Jacobian and its characteristic equation, shown as Eq. (5) in [1], are actually for the case when y -variable is used as the reference state, i.e., when a feedback controller u is expressed by

$$u = k(x - y + z) + qy + k_p(y_{\text{ref}} - y), \quad (1)$$

where $y_{\text{ref}} = f(x_{\text{ref}})$.

The correct Jacobian and the corresponding characteristic equation, as variable x is used as the reference state, are shown as follows, respectively:

$$J = \begin{bmatrix} p(-(6x_{\text{ref}}^2 - 1)/7) & p & 0 \\ 1 & -1 & 1 \\ k - k_p & -k & k \end{bmatrix}$$

and

$$|\lambda I - J| = \lambda^3 + \left(1 - k + p \frac{6x_{\text{ref}}^2 - 1}{7}\right) \lambda^2 + p \left(\frac{6x_{\text{ref}}^2 - 1}{7} (1 - k) - 1\right) \lambda + pk_p. \quad (2)$$

The stability diagram in the x - k plane from Eq. (2), as shown in Fig. 1, and Fig. 2 in [1] is for the case when y is the reference state.

Furthermore, it should be pointed out here that the captions of Figs. 7 and 8 in this paper should be exchanged.

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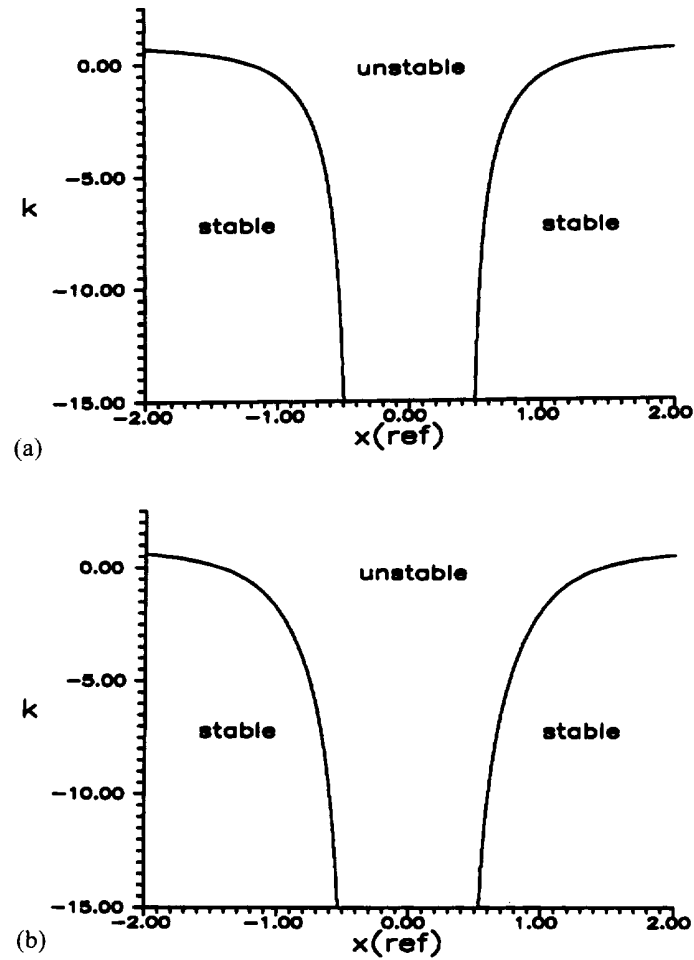


Fig. 1. The stability diagram in the $x_{\text{ref}}-k$ plane with different k_p when x -variable is used as the reference state: (a) $k_p = 1$; (b) $k_p = 10$.

References

- [1] C.C. Hwang, H.Y. Chow and Y.K. Wang, Physica D 92 (1996) 95–100.
- [2] A. Huang and T. Yang, Physica D 102 (1997) 364–366.