

Errata on “Strengthened Circle and Popov Criteria for the Stability Analysis of Feedback Systems With ReLU Neural Networks”

Carl R. Richardson¹, Matthew C. Turner², *Member, IEEE*, and Steve R. Gunn

IN THE above article [1], the following corrections should be noted. The publisher regrets the errors.

In (22), an extraneous character was included. The correct formula is presented here.

$$\begin{aligned} \dot{V}_c(x) \leq & 2x'Px + 2\Phi(y)'V[y - \Phi(y)] \\ & + 2\Phi(y)'Q_{11}\Phi(y) \end{aligned} \quad (22)$$

Just below (39), a halmos was incorrectly included at the end of Corollary 1.

Reference [18] included typographical errors and a broken link. The correct reference is as follows:

[18] E. D. Anderson and K. D. Anderson, “The MOSEK interior point optimizer for linear programming: An implementation of the homogeneous algorithm,” in *High Performance Optimization*, vol. 33, H. Frenk, K. Roos, T. Terlaky, and S. Zhang, Eds. Boston, MA, USA: Springer, 2000, pp. 197–232, doi: [10.1007/978-1-4757-3216-0_8](https://doi.org/10.1007/978-1-4757-3216-0_8).

REFERENCE

- [1] C. R. Richardson, M. C. Turner, and S. R. Gunn, “Strengthened circle and Popov criteria for the stability analysis of feedback systems with ReLU neural networks,” *IEEE Control Syst. Lett.*, vol. 7, pp. 2635–2640, 2023, doi: [10.1109/LCSYS.2023.3287494](https://doi.org/10.1109/LCSYS.2023.3287494).

Manuscript received 13 July 2023; accepted 13 July 2023. Date of current version 1 August 2023. This work was supported in part by the Defence Science and Technology Laboratory (DSTL) and in part by the U.K. Research and Innovation (UKRI) Centre of Machine Intelligence for Nano-Electronic Devices and Systems under Grant EP/S024298/1. Recommended by Senior Editor L. Zhang. (*Corresponding author: Carl R. Richardson.*)

The authors are with the School of Electronics and Computer Science, University of Southampton, SO17 1BJ Southampton, U.K. (e-mail: cr2g16@soton.ac.uk; m.c.turner@soton.ac.uk; srg@ecs.soton.ac.uk).

Digital Object Identifier [10.1109/LCSYS.2023.3295973](https://doi.org/10.1109/LCSYS.2023.3295973)