Correspondence

Corrections to "Blind Source Separation Using Renyi's Mutual Information"

In the above paper [1], the authors have found that it contains an incorrect statement. The introductory section includes the sentence "However, both (1) and (2) are nonnegative [6], and both evaluate to zero when and only when the joint PDF can be written as a product of the marginals." As it is written, reference [6] in the letter appears to apply to both (1) and (2); however, it should only apply to (1). Furthermore, the previously held belief that the estimator of Renyi's Mutual Information, given by (2), can never be negative has since been determined to be in error. This is the case, for example, for sub-Gaussian sources. Although it has been proven that (2) has a minimum value of zero for the case that there are two Laplacian sources, there is no known proof that generalizes this result for any combination of super-Gaussian sources and/or for any number of sources. It does appear that, for sub-Gaussian sources, there is a local minimum at the location corresponding to separation (which evaluates to zero), but it may not be the global minimum. Therefore, the sentence above should be corrected to read "... (1) is nonnegative and evaluates to zero when and only when the joint PDF can be written as a product of the marginals [6]. In addition, for super-Gaussian sources there is experimental evidence that (2) is also nonnegative and evaluates to zero only when the joint PDF can be written as a product of the marginals." The end result is that the criterion must be slightly modified in order for it to also separate sub-Gaussian sources. The details of the modification may be found in a paper by the same authors [2]. The authors wish to extend an apology for any inconvenience this may have caused.

REFERENCES

[1] K. E. Hild II, D. Erdogmus, and J. C. Principe, "Blind source separation using Renyi's mutual information," *IEEE Signal Processing Lett.*, vol. 8, pp. 174–176, June 2001.
[2] ——, "Blind source separation using information-theoretic learning," *J. Mach. Learn. Res.*, Oct. 2002, submitted for publication.

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Comments on "Fast Approximation of Kullback–Leibler Distance for Dependence Trees and Hidden Markov Models"

For the above paper [1], the Associate Editor coordinating the review of this manuscript and approving it for publication was Dr. Marcelo A. Bruno.

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[1] M. N. Do, "Fast approximation of Kullback–Leibler distance for dependence trees and Hidden Markov models," *IEEE Signal Processing Lett.*, vol. 10, pp. 115–118, Apr. 2003.

Digital Object Identifier 10.1109/LSP.2003.816070

Corrections to "Robust Stability of Two-Dimensional Uncertain Discrete Systems"

The authors of the above paper [1] point out that, unfortunately, they were unaware that a similar topic has been studied in [2], and that Theorem 1 and Theorem 2 of the letter have already been obtained in [2].

H. Kar and V. Singh (Dept. Electrical-Electr. Engineering, Atilim Univ., Incek, Ankara, Turkey) also made a comment on the following statement appearing on page 135 of the letter [1]: "Give an initial value $\alpha > 0$, $[\cdots]$ small enough. Solve LMI (20) again. If α approaches one eventually, then it means that the uncertain discrete-time 2-D system is *not* robustly asymptotically stable."

Since the Lyapunov theorem provides only a sufficient condition for stability, the last sentence in this statement is not justified. In other words, merely on the basis of the fact that the conditions given in Theorem 2 are not met, it would not be correct to draw the inference that the uncertain discrete 2-D system is not robustly asymptotically stable.

REFERENCES

[1] Z. Wang and X. Liu, "Robust stability of two-dimensional uncertain discrete systems," *IEEE Signal Processing Lett.*, vol. 10, pp. 133–136, May 2003.
[2] C. Du and L. Xie, "Stability analysis and stabilization of uncertain two-dimensional discrete systems: An LMI approach," *IEEE Trans. Circuits Syst. I*, vol. 46, pp. 1371–1374, Nov. 1999.

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