

Informative Priors for Minimum Cross-Entropy Positive Time–Frequency Distributions

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Abstract

A method for generating an informative prior when constructing a positive time–frequency distribution (TFD) by the method of the minimum cross-entropy (MCE) is developed. The prior is obtained from a combination of the Wigner distribution (WD) and the evolutionary periodogram, and results in a more informative MCE-TFD, as quantified via the mutual information of the distribution. The procedure allows any of the bilinear distributions to be used in the prior. Examples illustrate the performance of the new technique.

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