Samé, Allou; **Oukhellou, Latifa**; **Côme, Etienne**; **Aknin, Patrice**
Mixture-model-based signal denoising. (English) Zbl 1131.94008
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Summary: This paper proposes a new signal denoising methodology for dealing with asymmetrical noises. The adopted strategy is based on a regression model where the noise is supposed to be additive and distributed following a mixture of Gaussian densities. The parameters estimation is performed using a Generalized EM (GEM) algorithm. Experimental studies on simulated and real signals in the context of a diagnosis application in the railway domain reveal that the proposed approach performs better than the least-squares and wavelets methods.

MSC:

94A12 Signal theory (characterization, reconstruction, filtering, etc.)
94A08 Image processing (compression, reconstruction, etc.) in information and communication theory

Keywords:

denoising; asymmetrical noise; regression; Gaussian mixture model; EM algorithm; GEM algorithm

Full Text: DOI Link

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