MULTI−COMPONENT SIGNAL DENOISING USING UNITARY TIME−FREQUENCY TRANSFORMS (WedAmOR1)

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Abstract :

Recently, the analysis of multi−path configurations became a challenging problem for people working in communication or channel characterization fields. In these areas, the received signal is generally expressed as the sum of the transmitted signal and its time−shifted versions. The estimation of the multi−path parameters, typically based on a matched filtering procedure, depends on the noise−level in the received signal. As shown through experimental results, the usual denoising tools are not always well suited for signals arising from multi−path configuration. In this paper, a new denoising method is proposed adapted to the case of underwater multi−path configuration. This method, which preserves the distance between arrivals, leads to a better noise robustness of the matched filtering procedure.

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