

Adaptive Nonparametric Approach for Guaranteed Real-Time Detection of Targeted Signals in Multichannel Monitoring Systems

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Abstract : An adaptive nonparametric method is proposed for stable real-time detection of seismoacoustic sources in multichannel C-OTDR systems with a significant number of channels. This method guarantees given upper boundaries for probabilities of Type I and Type II errors. Properties of the proposed method are rigorously proved. The results of practical applications of the proposed method in a real C-OTDR-system are presented in this report.

Keywords : guaranteed detection, multichannel monitoring systems, change point, interval estimation, adaptive detection

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