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一种新的阵列信号降维SMI算法的性能分析

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摘要: 本文从信杂噪比损失因子的角度出发, 研究了利用随机降维变换矩阵对阵列信号进行SMI降维自适应(样本协方差矩阵求逆法)处理时输出信杂噪比的变化情况。通过分析发现, 降维变换矩阵对降维自适应处理的性能有很大影响。特别地, 对文中给出的一种降维变换矩阵做了深入的研究。

关键词: 阵列信号处理; 自适应信号处理; 杂波抑制

中图分类号: TN959

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PERFORMANCE ANALYSIS OF A NEW REDUCED-DIMENSION SMI ALGORITHM FOR ADAPTIVE ARRAYS

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Abstract: Performance of reduced-dimension adaptive arrays is discussed. It is pointed out that, When Covariance matrix of the clutter is known, reduced-dimension adaptive Processing can be implemented without any loss in performance compared With that of the full-dimension adaptive processing, provided a specific reduced-dimension transform is applied. When the covariance matrix of the clutter is unknown, reduced-dimension adaptive processing can also be implemented by using a random transform matrix, and its performance can be controlled.

Key Words: array signals processing, adaptive signals processing, interference suppression

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