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论文

基于修正的平滑伪WVD和Hough变换的二值积累的信号检测方法

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摘要
在低信噪比条件下，WVD-Hough变换可以有效的地检测多个线性调频信号，但是当多个线性调频信号能量相差很大时，强信号的平台会将弱信号的峰值给淹没， WVD-Hough变换就很难同时将这多个线性调频信号检测出来。该本文基于在WVD-Hough变换的基础上，提出了基于修正的平滑伪WVD和Hough变换二值积累的方法。这种方法可以同时检测出强信号以及被强信号平台掩盖的弱信号，具有很大的实用价值，仿真的结果验证了算法的有效性。

关键词 修正的平滑伪Wigner-Ville分布 Hough变换 二值积累 线性调频信号检测

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A Signal Detection Method Based on the Modified Smoothing Pseudo WVD and the Binary Integration of Hough Transform

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Abstract
The Wigner-Ville Distribution (WVD)-Hough transform could effectively detect several Linear Modulated Frequency(LMF) signals in low Signal to Noise Ratio (SNR.) environment. However, when the energy of these LMF signals diverge greatly, it is quite difficult to detect all the LMF signals with the WVD-Hough transform at the same time, because the platform of strong signals will cover weak signals. In this paper, a signal detection method based on Modified Smoothing Pseudo-WVD (MSPWVD) and binary integration in Hough transform parameter space is proposed according to the WVD-Hough transform. Using this method, strong signals as well as the weak signals covered by the strong signals can be de-tected simultaneously. It means that this method has high practicable value. Simulation results verify the effectiveness of this method.

Key words MSPWVD Hough transform Binary integration LMF signal detection

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