

论文

类傅里叶变换的多分量信号分离重构

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摘要

针对多分量信号重构的问题, 该文提出了一种新颖的类傅里叶变换方法, 并对其基本性质进行了分析。采用该方法将频域上混叠但在时频二维频谱图上不重叠的多分量信号变换到类傅里叶变换域, 使之在频谱上不产生混叠, 从而达到信号分离重构的目的。与分数傅里叶域最优滤波的方法进行的对比分析说明, 类傅里叶变换方法的适用范围更宽。文中对非线性的多分量调幅信号进行了仿真计算, 得到了满意的结果。表明该方法在信号检测和分析方面具有应用价值。

关键词 [多分量信号](#) [类傅里叶变换](#) [重构](#)

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Reconstruction of Multi-component Signals Based on the Analogous Fourier Transform

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Abstract

A novel method of analogous Fourier transform is proposed for reconstruction of multi-component signals, and the behaviors of this method are investigated. This method transforms multi-component signals, which are aliasing in frequency domain but not overlapping in time-frequency spectrogram, into analogous Fourier frequency domain where no aliasing appears. Compared with the method of optimal filtering in fractional Fourier domain, this method has better applicability. Simulation results show that this method can produce reliable reconstruction signals. This method has a variety of applications in the aspect of signal detection and analysis.

Key words [Multi-component signals](#) [Analogous Fourier transform](#) [Reconstruction](#)

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