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论文

一种改进的奇异值分解语音增强方法

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摘要
该文将多麦克语音增强方法用于单麦克语音增强，给出了一种改进的奇异值分解语音增强方法。该方法首先对输入矩阵进行雅克比奇异值分解，用得到的奇异值矢量构造语音增强滤波器；然后用输入矩阵与滤波器权矢量相乘来构造各路信号；最后采用麦克风阵列波束形成的方法，得到增强后的语音信号。仿真结果表明，该方法能有效地去除加性噪声，并且改善了语音质量。

关键词 语音增强 雅克比奇异值分解 波束形成

分类号 TN912.3

An Improved Speech Enhancement Method Based on SVD

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Abstract
This paper applies the microphone array speech enhancement method to the single microphone speech enhancement method, and proposes a new speech enhancement method based on Singular Value Decomposition(SVD). First, for the input matrix, the method adopts Jacobi singular value decomposition to get the singular value vector as the speech enhancement filter. Then the method multiplies the input matrix and the coefficient matrix of the filter to constitute the so called each channel signals. Finally, the method adopts microphone array beamforming method to gain the enhanced speech. The simulation shows that the proposed method can get rid of the addictive noise very well, and improve the speech quality.

Key words Speech enhancement Jacobi Singular Value Decomposition(SVD) Beamforming

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