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二维维纳滤波语音增强方法研究与实现

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摘要 充分考虑语音的短时相关性和叠接帧的存在, 实现了一种二维形式维纳滤波。采用多帧组合成块的结构进行二维加窗滤波, 然后辅以局部平滑的技术, 可以有效抑制噪声, 并防止乐性噪声出现。在二维维纳滤波方法与一维维纳滤波的对比实验中, 采用TIMIT语音数据库, 加上指定信噪比的白噪声, 实验结果表明前者不但在后者基础上又显著提高了信噪比客观参数, 而且MOS主观得分提升了13.8%。

关键词 [二维维纳滤波](#) [语音增强](#) [乐性噪声](#) [平均主观得分](#)

分类号

Study and implement of 2D Wiener filtering in speech enhancement

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Abstract

This paper develops a 2D wiener filter of speech enhancement methods, which can make use of the information between frames because of the speech signals' short-time stationary and the overlap of frames. This method filters the blocks formed of frames and windowed by 2D window. Then the target signal samples are smoothed in local. Experiment on the TIMIT database using speech data added with white noise shows that, the 2D wiener can improve the speech SNR much more, than the 1D case. And there is less residual musical noise, because the MOS scores increase 13.8%.

Key words [2D Wiener](#) [speech enhancement](#) [musical noise](#) [Mean Opinion Score \(MOS\)](#)

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