

论文

## 低速率WI编码器中4~6bit基音量化算法研究

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摘要

基音在语音编码中通常采用7bit无失真均匀量化。由于浊音段语音的基音普遍具有缓慢渐变的特点, 为了更有效地去除前后帧基音之间存在的相关性, 该文基于Eriksson和Kang提出的4bit基音量化算法, 针对汉语语音进行研究, 实现了一套4~6bit基音量化算法。该算法计算简单, 无需码书存储。将此基音量化方案应用于WI模型和WI编码器, 主观A/B听力测试结果表明, 该方案在高效量化基音的同时保证了合成语音质量几乎没有损失, 完全满足低速率WI编码器对量化基音的要求。

关键词 [语音编码](#) [基音量化](#) [波形内插](#)

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## Research on 4~6bit Pitch Quantization Algorithm in Low-Rate WI Coder

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Abstract

Pitch parameter is often quantized uniformly with no distortion using 7 bit in speech coding applications. As pitch changes slowly in voiced segments, in order to remove the correlation between two consecutive pitch more effectively, based on Eriksson and Kang's 4 bit pitch quantization algorithm, this paper implements a pitch quantization algorithm using 4~6 bit for Chinese. This algorithm has a small complexity and no codebook is needed. This pitch quantization algorithm is applied to WI model and WI coder, the results from the subjective A/B listening test indicate that this algorithm not only quantized pitch effectively, but also kept the quality of synthesized speech with no obvious hearing distortion. Therefore, it satisfies the accuracy of the quantized pitch of WI coder completely.

Key words [Speech coding](#) [Pitch quantization](#) [Waveform interpolation](#)

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