低信噪比环境下改进的新能零熵语音端点检测

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摘 要： 语音端点检测是语音处理和识别至关重要的一环.针对传统端点检测方法在低信噪比情况下语音端点检测正确率低，抗噪能力差等问题，本文提出了一种改进的新能零熵特征参数语音端点检测方法.该方法法通过对语音三个端点检测特征参数短时过零率，短时能量和基本谱熵分析研究并提出新的语音参数，即为短时能零熵值，最后采用双门限算法来进行端点检测.仿真实验表明，与传统的能零比端点检测法相比，该方法在不同低信噪比情况下有较高的端点检测准确性.

关键词： 端点检测；双门限算法；短时能零熵；低信噪比

A new improved energy-zero entropy speech endpoint detection with low signal-to-noise ratio

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Abstract： Speech endpoint detection is an important part of speech processing and recognition.Traditional endpoint detection methods have low accuracy in speech endpoint detection and poor anti-noise ability under the condition of low signal-to-noise ratio,In this paper, an improved zero-entropy feature parameter speech endpoint detection algorithm is proposed.This method studies the short-time zero-crossing rate, short-time energy and basic spectral entropy of three speech endpoint detection feature parameters, and proposes a new speech parameter, namely, the short-time energy zero-entropy value. Finally, a two-threshold algorithm is adopted to carry out endpoint detection.Simulation results show that compared with the traditional zero-energy ratio endpoint detection method, this method has higher endpoint detection accuracy under different low SNR conditions.

Key words： endpoint detection；energy-zero rate ratio；short-term energy-zero entropy；Low signal-to-noise ratio

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