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Accuracy of Jitter and Shimmer Measurements

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Abstract

A synthesized speech signal was used to measure the accuracy of the Jitter and Shimmer parameters calculated by a previously presented algorithm. The formant model of speech synthesis was used to produce speech signals with a controlled glottal periods and magnitudes according to previously determined Jitter and Shimmer parameters values. The Jitter parameters (jitta, jitter, rap and ppq5) and the Shimmer parameters (ShdB, Shim, apq3 and apq5) were calculated with a previously developed algorithm and compared with the analytic determined values and also with measures made with Praat software. Experiments with different type of jitter and shimmer perturbations and with different F_0 values were conducted. Also the influence of F_0 variations on Shimmer and Jitter measures was experimented.

Keywords: Speech Jitter; Speech Shimmer; Accuracy of Jitter measurements; Accuracy of Shimmer measurements.

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