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Performance analysis of IEEE 1857.2 lossless audio compression linear predictor algorithm (Conference Paper)

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Abstract

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In addition to commercial consumer market, high quality and multichannel audio has become more relevant in many other fields. More lossless audio compression standards and algorithm are proposed to tackle the problem of reducing the size of a raw audio bitstream without loss of data. This paper has two objectives. First, we aim to review and analyze the performance of the IEEE 1857.2 standard. Focus is on the predictor and the pre-processing block. The predictor utilizes Linear Predictive Coding (LPC) as its main mechanism. The pre-processing block normalizes the error residue of the Linear Predictive encoder. The second objective is to present results from experimenting different wave sound file type inputs. Results are discussed, and comparisons are made to identify the effect on compression ratio of the lossless encoder. As well as this, comparison is made to analyze the entropy flatness of the error residue from the predictor and pre-processing output the predictor order in the linear predictive coding mechanism varies. We concluded that pre-processing block works well to flatten the output at lower predictor order for all the sound types, but works best at improving the residual output for music sound type. © 2017 IEEE.

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