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New recursive algorithms for the unified forward and inverse MDCT/MDST. (English)

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Summary: Forward and inverse MDCT are two of the most computationally intensive operations in the MPEG audio coding standard. In this paper we derive sinusoidal recursive formulas for transforming kernels of the MDCT/MDST and IMDCT/IMDST. Then we efficiently implement MDCT/MDST and IMDCT/IMDST of the general length using the regressive structure derived from the sinusoidal recursive formulas. The proposed regular structure is particularly suitable for parallel VLSI realization. Our solution requires significantly less operations as well as less hardware compared with a recently proposed one.

MSC:

68W35 Hardware implementations of nonnumerical algorithms (VLSI algorithms, etc.)

Cited in **3** Documents

Keywords:

MDCT/MDST; IMDCT/IMDST; MPEG audio coding standard

Software:

MDCT/MDST

Full Text: DOI