DESIGNING NON-STATIONARY BIORTHOGONAL WAVELETS FOR IMPROVED IMAGE COMPRESSION

Yasmine Fourar and Khaled Melkemi

Department of Mathematics, Faculty of Mathematics and Informatics
University of Batna 2, Fesdis, Batna, ALGERIA
Email: ya.fourar@univ-batna2.dz, k.melkemi@univ-batna2.dz

SUMMARY

This paper presents a novel method for designing non-stationary biorthogonal wavelets using normality and biorthogonality conditions of nonstationary multiresolution analysis. Non-stationary biorthogonal wavelets are effective in reducing image size while preserving quality, and can capture localized features accurately, making them a popular choice in image compression algorithms.

Keywords and phrases: Biorthogonality; Non-stationary wavelets; Image compression; Signal processing; Cardinal Chebyshev B-spline; Entropy; Filter banks.

2020 Mathematics Subject Classification : Primary 65T60, secondary 94A12.