



A FRAMEWORK FOR FPGA BASED DISCRETE BIORTHOGONAL WAVELET TRANSFORMS IMPLEMENTATION (MonPmPO4)

✳ Author(s) :

Isa Servan Uzun
Abbes Amira

(The Queen's University of Belfast, United Kingdom)

(The Queen's University of Belfast, United Kingdom)

✳ Abstract :

During the last decade, the wavelet transform has proven to be a valuable tool in many application fields including telecommunication, numerical analysis and most notably image/video compression. This paper describes a high-level framework dedicated to the implementation of 1-D and 2-D Discrete Biorthogonal Wavelet Transforms (DBWTs) on FPGAs. The system hides the low level hardware details of the FPGA structure and thus allows the user to concentrate more on the experimentation rather than on the low-level architecture. The DBWT architectures proposed within the framework are scalable, modular and have less area and time complexity when compared with existing structures. FPGA implementation results based on a Xilinx Virtex-2000E device have shown that proposed system provides an efficient solution for the processing of DBWTs in real-time.

[Menu](#)