

# Abstract

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## **Design of a Merged Algorithm for Luby Transform Decoders**

Luby Transform exhibits near-optimal performance over Binary Erasure channel. However, on AWGN channel, Luby decoding technique suffers from error propagation. Consequently, a soft decoding strategy -Belief Propagation- similar to the LDPC has been adopted. In this strategy, the check node equation complexity is still a persistent problem affecting hardware implementation in terms of speed &#97;&#110;&#100; area. We propose an encoding scheme that uses both Luby decoding technique &#97;&#110;&#100; the soft input available at the receiver to reduce the check node equation complexity. In the proposed algorithm, error propagation has been mitigated thus reducing the signal-to-noise ratio significantly.