

Construction of short-length high-rates LDPC codes using difference families

Deskripsi Lengkap: <https://lib.ui.ac.id/detail?id=119106&lokasi=lokal>

Abstrak

Low-density parity-check (LDPC) code is linear-block error-correcting code defined by sparse parity-check matrix. It is decoded using the message-passing algorithm, and in many cases, capable of outperforming turbo code. This paper presents a class of low-density parity-check (LDPC) codes showing good performance with low encoding complexity. The code is constructed using difference families from combinatorial design. The resulting code, which is designed to have short code length and high code rate, can be encoded with low complexity due to its quasi-cyclic structure, and performs well when it is iteratively decoded with the sum-product algorithm. These properties of LDPC code are quite suitable for applications in future wireless local area network.