

Master's Thesis, Forschungspraxis

# Implementation of quantized LDPC decoder

Because of increasing data rate requirements, the need for low-complexity and high throughput decoding algorithms is acute. For LDPC codes, the data flow between the variable node (VN) and check node (CN) component codes during one iteration of the belief propagation (BP) decoding algorithm is a major source of complexity. The data flow is linear in the number of quantization bits of the messages. For applications with very high throughput requirements such as optical communications, the messages are usually quantized to four bits to alleviate this problem.

This work will focus on implementing some quantized message passing algorithms and then comparing their performance.

## Prerequisites

- Channel codes for iterative decoding
- C/Matlab

## Advisors

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