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Project Work
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Development of a Teaching Tool for the Performance Investigation of Convolutional Codes

Abstract

Convolutional codes are important channel coding methods to improve the performance of wireless data transmission systems. They are a class of codes that enable correct transmission by taking up additional bandwidth, but instead of sending parity and check bits, it actually encodes the sequence into another longer sequence that has favorable properties. The codes are assumed to be binary as that is the most frequent case in wireless communications.

In this project, a teaching tool is developed using SIMULINK and MATLAB to investigate various aspects of convolutional codes. A theoretical description of convolutional codes is provided along with the demonstration and description of the coding and decoding principle and a comparative performance investigation of these codes.

Examiner: Prof. Dr.-Ing. Uwe Meier