Ministry of Higher Education

and Scientific Research

University of Diyala

College of Engineering

Department of Communication

Simulation Of Trellis Coded Modulation (TCM) Technique

A project submitted to the college of engineering of the university of Diyala in partial fulfillment of the requirement for the degree of B.sc in communication engineering.

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1.1 Abstract

Trellis coded modulation (TCM) is used in band limited communications system. TCM efficiency improves coding gain by combining modulation and forward error correction coding in one process. In TCM the bandwidth expansion is not required because it uses the same symbol rate and power spectrum, the differences are the introduction of a redundancy bit and the use of constellation with double points. This project presents convontional encoder and convolutional code (2,1,3) and the complete transmitter of a digital communications system. In the decoder, a hamming distance is used as a cost function to determine output in the maximum likelihood viterbi- decoder, using the relationship between the delay states and the path state in the trellis tree of the code.

4.3 References

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