Investigation of Channel Coding Techniques for High Data Rate Mobile Wireless Systems

Abstract

21st century certainly belongs to a new wireless world. Be it voice or data communication, in every walk of life wireless is the call in this era. The need of the present scenario for wireless applications is the enhanced data rate for various applications of communication along with reduction in power requirements. But during message transferal, the data might get corrupted due to impairments of channels, affecting both the needs of data rate as well as power. Reduction of error due to noisy channels becomes critical. Here, channel coding comes out as bliss. These techniques are used for rendering reliable information through the transmission channel to the user. These approaches preserve data while it is being transported through channel. When error occurs, channel coding detects and corrects it and helps the communication systems design to reduce the noise effect during transmission. It is due to endowment of these coding techniques that we are today capable to reach near Shannon limits.

The purpose of this paper is to study and analyze the performance and efficiency of different Forward error correcting (FEC) codes. Their improvement in performance is compared to tradeoffs in complexity and decoding lag. It has been observed that though selection of code is dependent on in-hand application but turbo codes outrun other codes in many aspects.

Refer
References

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Index Terms

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Keywords

Turbo Convolution LDPC RS codes.