

Adaptive Binary Coding For Diversity Communication Systems

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Summary

Coding and diversity are two powerful techniques to combat fading effects on communication channels. In this paper the available diversity channels are utilized by forward error correction coding in an adaptive fashion to improve the reliability of the system. Based on the quality of the diversity channels, the code rate over each channel is determined using discrete optimization of the overall error probability, subject to the constraint of fixed overall throughput rate. It is found that the proposed system provides noticeable gain over the classical diversity system when binary BCH codes with hard-decision decoding are used. Moreover, the proposed system offers flexibility in choosing the throughput of the system, which the diversity system lacks. The advantages of the proposed system are obtained at only slight increase in implementation complexity

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