Abstract

Cooperative communications have been proved to be a promising technique in next generation wireless communication and network system. Limited feedback is a novel technique that employs several bit of channel state information (CSI) feedback and achieves almost the same performance as perfect feedback. However, literature on cooperative communications and limited feedback in underwater acoustic (UWA) environments is very scarce. Therefore, in this paper, we propose a novel UWA cooperative communication system with limited feedback. Minimum error rate criterion-based optimization model (Part I) will be involved to analyze the performance of the adaptive power allocation based on the proposed system. Limited feedback general procedure and codebook design will be demonstrated. Simulation results will compare the performance of the full CSI feedback, a few bits of feedback and uniform power allocation.

References

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Index Terms

Computer Science

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**Keywords**

Cooperative communications  minimum error rate criterion  power allocation  limited feedback  Lloyd algorithm