

论文

水声相干通信信道均衡实验研究

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摘要

在水声相干通信中, 自适应均衡是克服信道码间干扰的有效方法。为了检验所设计的水声相干通信数据处理方法的正确性及作者所提出的一种变步长低计算量自适应均衡算法在实际应用中的性能, 进行了水下通信实验。对实验数据的处理结果表明, 常用的 $T_s/2$ 分数间隔均衡效果不理想, 采用 $T_s/4$ 分数间隔均衡时性能有很大提高并获得了零误码。通过与传统算法进行性能对比得出, 该算法在初始步长取值变化时具有很好的收敛性能且计算量较低, 性能优于传统算法。

关键词 [水声相干通信](#) [均衡算法](#) [分数间隔均衡](#)

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Experiment Studies on Coherent Underwater Acoustic Communication Equalization

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Abstract

Adaptive equalization is an effective way to cope with intersymbol interference caused by multipath propagation in underwater acoustic coherent communication. An experiment is carried out to verify the coherent underwater acoustic communication technique and to study the performance of adaptive equalization algorithm promoted by the author. Data processing results show that there is poor performance at $T_s/2$ fractionally spaced equalization and by using $T_s/4$ spaced equalization the data is without error. This algorithm has better performance compared with conventional equalization algorithms because it has robust convergence performance for its adaptive stepsize behavior and has low computational load.

Key words [Coherent underwater acoustic communication](#) [Equalization algorithm](#) [Fractionally spaced equalization](#)

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