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PHASE NOISE SUPPRESSION METHOD BASED ON SOFT INFORMATION DECODING IN SPACE
COMMUNICATIONS

Abstract

With the increasing capacity of space communications, when high order modulation and demodulation is widely used, the request of system performance is much higher. The phase noise has become the main influence factor in space communications system. According to this situation, this paper proposes an improved method to reduce phase noise based on soft information decoding. Soft information decoding has lower BER and higher reliability than harder decision, which is widely used in space communications. Based on the LMS algorithm, this paper using the data after soft information decoding reduce phase noise effect and repair outcome after phase noise suppression. Through the simulation, the method has a better performance of reducing the phase noise and the system has better performance and lower BER.