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Application Analysis of Oversampling Technology in Communication Signal Processing

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Abstract: *The current era is the information age, and communication technology has changed the life of all mankind. However, due to the large amount of information, noise and other signals may appear when receiving communication signals, which affects people's experience of receiving signals normally. The traditional way of processing communication signals is not only ineffective, but also relatively complex. Over-sampling technology can make the signal tend to be stable and easy to process. In the current era, the communication signals become more complex, and the traditional processing methods are obviously not applicable. In this case, the over-sampling technology can be used to process them well, thus ensuring that the communication signals can be obtained effectively. This paper mainly discusses the application of oversampling technology in communication signal processing and its application significance, hoping to bring some help to relevant people.*

Keywords: *oversampling technology communication signal*

1. Introduction

When processing a communication signal, it is usually modulated before sending the signal, but the modulated signal needs to go through a certain period. In order to simplify the processing mode, the communication signal needs to be more stable. Through oversampling technology, the communication signal can be cyclostationary, which is convenient for processing. The application of oversampling technology is beneficial to people's all-round control of communication signal processing, thus ensuring that people can get the information they need. Although it has been said that sampling technology can facilitate the processing of communication signals, this technology itself has certain complexity, which requires new requirements for signal processing technology, and people concerned need to continuously study this technology, so as to ensure the rational application of oversampling technology.

First, the application significance of oversampling technology in communication signal processing. In the practical application of oversampling technology, the noise distribution in communication signals can be changed, thus reducing the existence of noise. Because of the existence of noise, people's experience in obtaining related signals is extremely poor. Therefore, the probability of noise appearing in useful signal channels can be reduced by the application of over-sampling technology, and people's experience can be enhanced by using tools such as low-pass filters, so that people can easily receive the information they need, enhance the signal-to-noise ratio of communication signals, and optimize communication signals. At present, it is the information age, and with the continuous development of the times, the application scale of information is gradually expanding, so communication engineering has become a model that people pay attention to at present. Communication signals are easily affected by various factors, which makes people receive various noises and even noises, and affects people's normal communication. Through the application of oversampling technology, the intersymbol interference between signals can be effectively suppressed, thus improving the stability of communication signals. Through over-sampling technology, the application degree of blind equalization and blind identification can be improved, so as to ensure the signal quality in the communication system, make the communication signal more detailed, improve the transmission rate of the communication signal, strengthen the stability of the communication signal, and meet the needs of the development of the current era.

2. Application of oversampling technology in communication signal processing

At present, radar systems are widely used in all walks of life in China, especially in the detection of air and sea targets. Through radar signal processing, the detection of detection target can be more refined,

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thus enhancing the stability of communication signal. The application of oversampling technology can increase the amount of information, so that the radar receiver can detect more small signals and improve the efficiency of radar signal processing. There are many kinds of interference signals and clutter in the radar scanning signal. Therefore, in order to improve the radar receiver's signal detection ability, it is necessary to improve the receiver's own coverage and ensure that it can cover a wide range, so that the receiver has a steady stream of power.

In the work of processing communication signals, although the related signals of blind sources are branch contents, it is a necessary work to process them. Therefore, in the actual processing work, we should set up a relatively independent field to deal with it. Generally speaking, when processing communication signals, there will be more and more complex influence signals, which will lead to the problem that a variety of signals are mixed with each other in the receiving process, thus reducing the working effect. By using blind source separation, it is convenient to separate the mixed signals. According to the relevant technical characteristics and the actual situation, the original signal and all aspects of the channel information can be better obtained, which makes it more convenient to create independent unknown source signals and play a better role in the processing of communication signals. When blind source separation is used, the rationality of this method should be guaranteed, and the second-order cyclic cumulant can be used as the basis to ensure that the whole work can be completed better. Through the application of oversampling technology, signal separation can have a better foundation, thus enhancing the stability of communication signal processing and better meeting the actual needs of current work. Oversampling technology can realize the diversity of calculation basis of blind source separation, so that blind source separation can give full play to its own role.

3. Conclusion

This paper mainly puts forward the application of the above oversampling technology in communication signal processing, which is common. Relevant people should ensure the rationality of the application of oversampling technology, so as to enhance the working efficiency of communication signal processing and ensure the stability of signal reception. Nowadays, the development speed of communication technology is gradually accelerating. In this era, the cyclostationarity of communication signals is a hot topic that people are studying at present. By effectively utilizing cyclostationarity, the calculation method can be made simpler, the signal-to-noise ratio can be improved, and the actual value of signal processing can be improved. The application of oversampling technology in communication signals can make people thoroughly grasp the cyclostationarity of communication signals, thus making rational use of this characteristic, ensuring the effectiveness of processing communication signals, and making the application of communication technology bring greater benefits to people's lives, thus promoting the development of communication technology.

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