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基于PN序列抽取的伪码调相引信信号处理研究(PDF)

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Title: The Study of Signal Processing of Pseudo-random Code Phase Modulation Fuze Based on Decimating PN Sequence

作者: [张庆辉¹](#); [刘明友²](#); [向云强²](#)

1 河南工业大学信息科学与工程学院, 郑州 450001;

2 防空兵学院, 郑州 450052

Author(s): [ZHANG Qinghui¹](#); [LIU Mingyou²](#); [XIANG Yunqiang²](#)

1 College of Information Science and Engineering, Henan University of Technology, Zhengzhou 450001, China;

2 Air Defence Force Academy, Zhengzhou 450052, China

关键词: [PN序列](#); [抽取](#); [伪码调相引信](#); [实现原理](#)

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摘要: 现有的A/D和DSP硬件性能一直是伪码调相引信信号处理系统数字化过程中的瓶颈。文中讨论了一种带有抽取数字相关器的伪码调相引信。该技术利用抽取PN序列原理,在保持引信距离分辨率的同时,减少了对A/D采样率和DSP处理速率的要求。文中分析了原理,给出了实现过程,并进行了仿真,结果表明基于PN序列抽取的伪码调相引信距离响应保持不变。但该方法需要增加积分时间以提高信噪比。

Abstract: The current capabilities of A/D and DSP are always bottlenecks when the signal processing system of pseudo-random code phase modulation fuze is digitalized. In the thesis, a kind of pseudo-random code phase modulation fuze with decimating digital correlator was discussed. The technology utilizes the theory of decimating PN sequence and reduces the requirement for sampling rate of A/D and processing rate of DSP while it maintains the range resolution. In the thesis, the theory was analyzed and the implementation process of the fuze was provided and simulated. The simulation results show that the range responses of the pseudo-random code phase modulation fuze based on decimating PN sequence remain unchanged, but the integration time need to be lengthened in order to improve SRN.

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备注/Memo: 收稿日期:2012-11-02 作者简介:张庆辉(1974-),男,河南南阳人,副教授,博士,研究方向:信号与信息处理。

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