

### 一种基于与BCH码等价原理的m序列重构算法

柴先明<sup>\*①</sup> 魏跃敏<sup>①</sup> 师栋锋<sup>①</sup> 蔡凯<sup>①</sup> 黄知涛<sup>②\*</sup>

<sup>①</sup>(北京遥感信息研究所 北京 100192) <sup>②</sup>(国防科技大学电子科学与工程学院 长沙 410073)

### A Method for Reconstruction of m Sequence Based on the Equivalence with BCH Codes

Chai Xian-ming<sup>①</sup> Wei Yue-min<sup>①</sup> Shi Dong-feng<sup>①</sup> Cai Kai<sup>①</sup> Huang Zhi-tao<sup>②\*</sup>

<sup>①</sup>(Beijing Institute of Remote Sensing Information, Beijing 100192, China)

<sup>②</sup>(Department of Electronic Science and Engineering, National University of Defense Technology, Changsha 410073, China)

摘要

参考文献

相关文章

Download: PDF (223KB) [HTML](#) 1KB Export: BibTeX or EndNote (RIS) [Supporting Info](#)

**摘要** 该文针对现有m序列特征多项式估计方法在高阶高误码条件下的估计效率不高, 精度不够的问题展开研究, 通过分析m序列和BCH码的生成原理, 得出二者之间的等价关系, 进而提出了一种新的m序列特征多项式的估计算法。该算法通过构造与之等价的BCH码, 利用其良好的纠错性能, 实现高误码条件下的m序列特征多项式的估计, 仿真结果表明本算法能较好地解决误码条件下的m序列特征多项式估计问题, 运算速度主要适用于通信信号处理中常用20阶以内的m序列分析问题。

**关键词:** 信号处理 m序列 特征多项式 BCH码 等价

**Abstract:** The issue of insufficient efficiency and accuracy of current estimation methods for characteristic polynomial of m sequence under high error conditions is studied. A equivalent relationship between m sequence and BCH codes is derived by studying their generation principles, and then a new estimation algorithm for characteristic polynomial of m sequence is proposed in the paper. By constructing equivalent BCH codes, characteristic polynomial of m sequence is estimated using their good error-correction performance under high error conditions. Simulation results show that the algorithm can solve the estimation for characteristic polynomial of m sequence under error conditions, operation speed of the algorithm can mainly be accepted for analysis of m sequence lower than 20-order in signal processing.

**Keywords:** Signal processing m sequence Characteristic polynomia BCH codes Equivalence

Received 2010-01-12;

通讯作者: 柴先明 Email: elevant110@163.com

引用本文:

柴先明, 魏跃敏, 师栋锋, 蔡凯, 黄知涛. 一种基于与BCH码等价原理的m序列重构算法[J] 电子与信息学报, 2011, V33(2): 304-308

Chai Xian-Ming, Wei Yue-Min, Shi Dong-Feng, Cai Kai, Huang Zhi-Tao. A Method for Reconstruction of m Sequence Based on the Equivalence with BCH Codes [J], 2011, V33(2): 304-308

链接本文:

<http://jeit.ie.ac.cn/CN/10.3724/SP.J.1146.2010.00028> 或 <http://jeit.ie.ac.cn/CN/Y2011/V33/I2/304>

#### Service

- ▶ [把本文推荐给朋友](#)
- ▶ [加入我的书架](#)
- ▶ [加入引用管理器](#)
- ▶ [Email Alert](#)
- ▶ [RSS](#)

#### 作者相关文章

- ▶ [柴先明](#)
- ▶ [魏跃敏](#)
- ▶ [师栋锋](#)
- ▶ [蔡凯](#)
- ▶ [黄知涛](#)