

## OB增强型编码双向中继方案及中断概率分析

季彦呈\* 葛建华 李靖 师晓晔\*

西安电子科技大学综合业务网理论及关键技术国家重点实验室 西安 710071

## Design and Outage Probability Analysis of an Incremental Coded Bi-directional Relaying Scheme

Ji Yan-cheng Ge Jian-hua Li Jing Shi Xiao-ye\*

State Key Lab. of Integrated Service Networks, Xidian Univ., Xi'an 710071, China

摘要

参考文献

相关文章

Download: PDF (266KB) [HTML](#) 1KB Export: BibTeX or EndNote (RIS) Supporting Info

**摘要** 该文提出了一种基于网络编码和空时协作的增强型双向中继方案。根据系统各节点的反馈,该方案将网络编码和空时协作有机结合,能提高系统资源利用率和网络吞吐量。推导了所提方案及现有的两种双向中继方案的中断概率,并分析了各方案在快衰落和慢衰落信道下的分集增益和网络编码增益。结果表明:相对于其它两种方案,所提方案在快衰落信道下,可获得三阶的分集增益;在慢衰落信道下,也可获得更高的编码增益。最后通过仿真验证了分析结果的正确性。

**关键词:** 中继通信 网络编码 空时分组码 协作分集 中断概率

**Abstract:** An Incremental Coded Bi-directional Relaying (ICBR) scheme based on network coding and space-time cooperation is proposed, which utilizes the feedback information from nodes in the system. Cooperation in this way could improve resource efficiency and network throughput. The outage probabilities and the network-coding gain of different bi-directional relaying schemes are developed and analyzed. The numerical results show that compared with the other two schemes, ICBR scheme brings three-order diversity gain in fast fading channels and higher coding gain in slow fading channels. Furthermore, the theoretical results are verified with the simulation results.

**Keywords:** Relay communication Network coding Space-time block coding Cooperative diversity Outage probability

Received 2009-12-11;

本文基金:

国家自然科学基金(61001207), 长江学者和创新团队发展计划(IRT0852), 广东省-国家自然科学基金委联合基金(U0635003)和陕西省自然科学基金(2007F07)资助课题

通讯作者: 季彦呈 Email: xd.jyc@163.com

引用本文:

季彦呈, 葛建华, 李靖, 师晓晔.OB增强型编码双向中继方案及中断概率分析[J] 电子与信息学报, 2011,V33(1): 199-204

Ji Yan-Cheng, Ge Jian-Hua, Li Jing, Shi Xiao-Ye.Design and Outage Probability Analysis of an Incremental Coded Bi-directional Relaying Scheme[J] , 2011,V33(1): 199-204

链接本文:

<http://jeit.ie.ac.cn/CN/10.3724/SP.J.1146.2009.01588> 或 <http://jeit.ie.ac.cn/CN/Y2011/V33/I1/199>

### 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

- ▶ 季彦呈
- ▶ 葛建华
- ▶ 李靖
- ▶ 师晓晔