

Attn.: Wayne HU 胡寅
Springer Shanghai
RM 1006-1007, Financial Plaza
No. 333 Jiujiang Road | Shanghai 200001 | China
Tel +86 21 6087 1688 ext. 825
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***TITLE (OR WORKING TITLE) OF YOUR BOOK;**

书名 (或暂定书名);
(English and Chinese)

Game-theoretic Interference Coordination Approaches for Dynamic Spectrum Access
动态频谱接入中基于博弈论的干扰协调

***SUBTITLE:**

副标题:
(English and Chinese)

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丛书名 (如果已知): SpringerBriefs in Electrical and Computer Engineering

***AUTHORED OR EDITED WORK?**

本选题是authored (作者署名) 的专著? 还是edited (编辑署名多作者参与) 的编著?

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***ESTIMATED NUMBER OF MANUSCRIPT PAGES(Standard A4 format):**

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本书属于那种类型的书籍？（请在以下选项中选择）

 Monograph 专著 **Brief 简述**

***TABLE OF CONTENTS (please list below, preliminary, 1st hierarchy is sufficient):**

目录（初步的，只需要列出章节一级标题）：

Contents:

1. Introduction

2. Game-theoretic Interference Coordination in Time-varying Environment

3. Game-theoretic MAC-layer Interference Coordination with Orthogonal Channels

4. Game-theoretic MAC-layer Interference Coordination with Partially Overlapping Channels

5. Game-theoretic Interference Coordination for Sequential Channel Sensing and Access

6. Research Challenges and Directions

7. Summary and Conclusions

Note: The above contents are mainly based on the authors' previous work [A1-A4].

[A1] Qihui Wu, XXXX, Jinlong Wang, Liang Shen, Jianchao Zheng and XXXX, "Distributed channel selection in time-varying radio environment: Interference mitigation game with uncoupled stochastic learning," *IEEE Transactions on Vehicular Technology*, vol. 62, no. 9, pp. 4524 – 4538, 2013.

[A2] XXXX, Qihui Wu, Liang Shen, Jinlong Wang and Alagan Anpalgan, "Opportunistic spectrum access with spatial reuse: Graphical game and uncoupled learning solutions" *IEEE Transactions on Wireless Communications*, vol. 12, no. 10, pp. 4814-4826, 2013.

[A3] XXXX, Qihui Wu, Jinlong Wang, Liang Shen and Alagan Anpalgan, "Opportunistic spectrum access using partially overlapping channels: Graphical game and uncoupled learning," *IEEE Transactions on Communications*, vol. 61, no. 9, pp. 3906-2918, 2013.

[A4] XXXX, Qihui Wu, Liang Shen, Jinlong Wang and Alagan Anpalgan, "Robust multiuser sequential channel sensing and access in dynamic cognitive radio networks: Potential games and stochastic learning" *IEEE Transactions on Vehicular Technology*, to appear.

*** NAME AND ADDRESS OF EACH AUTHOR/EDITOR:**

(As they should appear in the book/please indicate order):

Name (English/Chinese) 姓名 Title(s) 职位 Affiliation/Address/phone/fax/e-mail/home page

请务必按照下列样例填写作者信息，作者姓名中英文必填，如涉及多位作者，请按照最终出现在书中的顺序填写

1. XXXX
Assistant Professor
College of Communications Engineering
PLA University of Science and Technology, Nanjing, China
(xxxx@gmail.com, +86 025 8082 8457(tel))

2. XXXX
Professor
Department of Electrical and Computer Engineering
Ryerson University, Toronto, Canada
(xxx@ee.ryerson.ca, +1 416 979 5000 (tel), www.ee.ryerson.ca/~alagan)

***MARKETING AUDIENCE:**目标读者

- What disciplines - in order of importance - are addressed by your book?(If not specified, we will choose the first subject code as the book store location.)请按照重要程度列出您的著作所覆盖的学科领域。(请从所附的Springer学科分类表中按重要程度挑选出学科名称及代码, 您所列的第1学科代码将作为该书所属学科分类的依据)

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- What main benefit will the reader derive from your book? Readership (who will be mainly benefited from your book?)

本书对读者来说有哪些主要价值? 主要的读者对象是哪些?

This book is written by subject experts based on the recent research results in dynamic spectrum access for cognitive radio networks. It establishes a game-theoretic framework and presents the cutting-edge technologies for distributed interference coordination. With game-theoretic formulation and the designed distributed learning algorithms, it provides insights on the interactions among multiple decision-makers and the converging stable states. Researchers, scientists and engineers in the field of cognitive radio networks can benefit from the book. As such, this book provides valuable knowledge, useful methods and practical algorithms that can be considered in emerging 5G wireless communication.

***AUTHOR INFORMATION:** Please give details of your area of work, honors, etc. which underline the usefulness of your book to the reader and may appear in the book.

(English):作者信息: 请简要地介绍一下您的工作领域及曾得到的荣誉, 这些将增加本书读者对作者的了解, 并有可能出现在图书封底文字中。

Dr. XXXX received his B.S. degree in Communications Engineering, and Ph.D. degree in Communications and Information Systems from College of Communications Engineering, PLA University of Science and Technology, in 2006 and 2014 respectively. He has been with College of Communications Engineering, PLA University of Science and Technology since 2012, and currently as an Assistant Professor. His research interests focus on dynamic spectrum access, learning theory, game theory, and distributed optimization techniques for wireless communications. He has published several papers in international conferences and reputed journals in his research area.

Dr. XXXX is an Editor for the KSII Transactions on Internet and Information Systems. He served as the Symposium Co-Chair for Advanced Game Theory Framework Applied to Wireless Emerging Communication Networks, in the International Conference on Game Theory for Networks (GameNets 2014), and served as the TPC member: for Track on Cognitive Radio and Spectrum Management in 22th IEEE Symposium on Personal, Indoor, Mobile and Radio Communications (PIMRC 2011), for Track of Intelligent and Cognitive Radio Networking in 9th International Conference on Broadband and Wireless Computing, Communication and Applications (BWCCA 2014), for Track of Networking, Protocols, Cognitive Radio, Wireless Sensor Networks, Services and Applications in 12th International Symposium on Wireless Communication Systems (ISWCS 2015) and for Tack of “Green Communications and Computing” in 2015 IEEE Global Communications Conference (GLOBECOM2015). In 2011 and 2012, he was awarded Certificate of Appreciation as Exemplary Reviewer for the IEEE Communications Letters.

Prof. A. XXXX received the B.A.Sc. (Hons), M.A.Sc. and Ph.D. degrees in Electrical Engineering from the University of Toronto, Canada. He joined the Department of Electrical and Computer Engineering at Ryerson University in 2001 and became a full Professor in 2010. He served the department as Graduate Program Director (2004-09) and the Interim Electrical Engineering Program Director (2009-10). During his sabbatical (2010-11), he was a Visiting Professor at Asian Institute of Technology and Visiting Researcher at Kyoto University. Dr. XXXX’s industrial experience includes working at Bell Mobility on 1xRTT system deployment studies (2001), at Nortel Networks on SECORE R&D projects (1997) and at IBM Canada as IIP Intern (1994). Dr. XXXX directs a research group working on radio resource management (RRM) and radio access & networking (RAN) areas within the WINCORE Lab. His current research interests include radio resource allocation and management, wireless cross layer design and optimization, collaborative communication, green communications technologies, small cell networks, and QoE-aware HetNets and machine-to-machine communication.

Dr. XXXX co-edited *Small Cell Networks: Design, Practice and Applications* (Cambridge University Press), *Handbook of Green Information and Communication Systems* (Academic Press) and *Routing in Opportunistic Networks* (Springer). He served as Associate Editor for the *IEEE Communications Letters* (2010-13), *IEEE Communications Surveys and Tutorials* (2012-14), and *Springer Wireless Personal Communications* (2009-15), Guest Editor for *ACM/Springer MONET* Special Issue on Green Cognitive and Cooperative Communication and Networking, and past Editor for *EURASIP Journal of Wireless Communications and Networking* (2004-2009). He also served as EURASIP Guest Editor for two special issues in Radio Resource Management in 3G+ Systems (2006) and Fairness in Radio Resource Management for Wireless Networks (2008). Dr. XXXX served as TPC Co-Chair of: IEEE Globecom SAC’15, IEEE PIMRC’11 Track on Cognitive Radio and Spectrum Management, IEEE IWCMC’11 Workshop on Cooperative and Cognitive Networks, IEEE CCECE’04/’08 and WirelessCom’05 Symposium on Radio Resource Management.

Dr. XXXX currently serves as Chair, IEEE Central Canada, and served as IEEE Toronto Section Chair (2006-07), ComSoc Toronto Chapter Chair (2004-05), Chair of IEEE Canada Professional Activities Committee (2009-11). He is the recipient of the Dean’s Teaching Award (2011), Faculty Scholastic, Research and Creativity Award (2010), Faculty Service Award (2010) at Ryerson University. Dr. XXXX also completed a course on Project Management for Scientist and Engineers at the University of Oxford CPD Center. He is a registered Professional Engineer in the province of Ontario, Canada.

***UNIQUE SELLING POINTS (USP)本书的特有卖点**

Please write 3 – 5 clear short phrases respectively in English and Chinese as selling points of your book making it unique compared to others.请用简短的语句列举3-5个本书区别于市场同类型其他图书的卖点，如介绍一本计算机图书时用到的简短句子，请参照例子的形式重新改写您以下的该书卖点：

- ✓ The first book available on game-theoretic distributed interference coordination for dynamic spectrum access.
- ✓ It offers novel game models and learning algorithms.
- ✓ Presents useful methodologies and algorithms to develop game-theoretic solutions in wireless communication networks.

*** COMPETITIVE LITERATURE:与之相关的竞争作品**

What other works have been published on this subject within recent 3-5 years. (Please give author, title, publisher,

year of publication) How does your work differ from them?

请列举本书内容领域近**3-5年内**已经出版的其他著作（请包含作者、书名、出版社、出版年份等信息）。本书有哪些不同于上述著作的地方？请尝试一下到 Amazon 及 Google 网站上搜索一下相关主题的图书

There are a number of published books on dynamic spectrum access (cognitive radio), e.g., [1]-[2]. In these work, there is always only one chapter on game-theoretic solutions for resource optimization problems. In our work, in-depth analysis for game models for dynamic spectrum access will be presented and discussed in detail. Furthermore, we consider this problem from a novel perspective of interference coordination, which significantly differs from previous work.

Very recently, game-theoretic control and optimization has drawn great attention in network and communication engineering, e.g., [3]-[4]. Our book is also in this category. As can be expected, the inherent features of interference coordination in dynamic spectrum access will be addressed, and the used methodologies in our work differ greatly from the existing books.

[1] Danda B. Rawat, Min Song, Sachin Shetty, Dynamic Spectrum Access for Wireless Networks, *SpringerBriefs in Electrical and Computer Engineering*, 2015.

[2] Robert C. Qiu, Zhen Hu, Husheng Li, Michael C. Wicks, Cognitive Radio Communications and Networking: *Principles and Practice*, Wiley, 2012.

[3] Hastagiri Prakash, Ramasuri Narayanam, Dinesh Garg and Y. Narahari, Game Theoretic Problems in Network Economics and Mechanism Design Solutions, *Springer*, 2009

[4] Fan Wu, Game Theoretic Approaches for Spectrum Redistribution, *SpringerBriefs in Electrical and Computer Engineering*, 2014.

***RELATED SPRINGER BOOKS(if known)**

如果知道的话，请填写**近3-5年内**由施普林格出版的与本书相关的书名、作者、出版日期等。

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[1], [3], [4] listed above are published by Springer.

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请同样按照重要性列出该书涉及的英文关键词，以便增加该书被检索到的几率。

Cognitive Radio Networks

Dynamic Spectrum Access

Non-cooperative game

Potential Game

Nash Equilibrium

Distributed Learning

Interference Coordination

*** OTHER COMMENTS OR SUGGESTIONS FOR PROMOTION ACTIVITIES:**

其他有关本书市场宣传活动的意见或建议：

1. Congresses (place/date)可参加推广的相关专业学术会议（时间/地点）

The mainstream academic conferences for wireless communications in China, e.g., IEEE WCSP, IEEE ICC, IEEE ChinaCOM. International conferences include IEEE ICC, IEEE Globecom, IEEE WCNC.

2. Journals for reviews可刊登书评的相关学术期刊

Internal reputed journals such as IEEE Wireless Communications, IEEE Networks, IEEE Transactions on Wireless Communications

3. Professional societies相关的专业学会

IEEE ComSoc, ACM, IET

4. Comments其他建议

Date: May 13, 2015 **Completed by:** XXXX

Please return by E-mail or by mail to:

Attn.: Wayne HU 胡寅

RM 1006-1007, Financial Plaza

No. 333 Jiujiang Road | Shanghai 200001 | China

Tel +86 21 6087 1688 ext. 825

Mobile +86 135 0188 4931

Fax +86 21 6075 1030

wayne.hu@springer.com