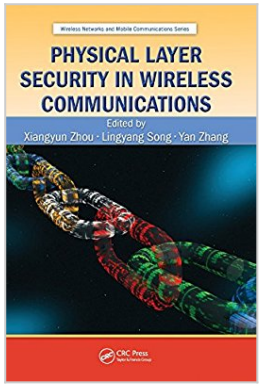

Physical Layer Security in Wireless Communications (Wireless Networks and Mobile Communications)

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Physical layer security has recently become an emerging technique to complement and significantly improve the communication security of wireless networks. Compared to cryptographic approaches, physical layer security is a fundamentally different paradigm where secrecy is achieved by exploiting the physical layer properties of the communication system, such as thermal noise, interference, and the time-varying nature of fading channels.

Written by pioneering researchers, **Physical Layer Security in Wireless Communications** supplies a systematic overview of the basic concepts, recent advancements, and open issues in providing communication security at the physical layer. It introduces the key concepts, design issues, and solutions to physical layer security in single-user and multi-user communication systems, as well as large-scale wireless networks.

The book starts with a brief introduction to physical layer security. The rest of the book is organized into four parts based on the different approaches used for the design and analysis of physical layer security techniques:

1. *Information Theoretic Approaches:* introduces capacity-achieving methods and coding schemes for secure communication, as well as secret key generation and agreement over wireless channels
2. *Signal Processing Approaches*: covers recent progress in applying signal processing techniques to design physical layer security enhancements
3. *Game Theoretic Approaches*: discusses the applications of game theory to analyze and design wireless networks with physical layer security considerations
4. *Graph Theoretic Approaches*: presents the use of tools from graph theory and stochastic geometry to analyze and design large-scale wireless networks with physical layer security constraints

Presenting high-level discussions along with specific examples, illustrations, and

references to conference and journal articles, this is an ideal reference for postgraduate students, researchers, and engineers that need to obtain a macro-level understanding of physical layer security and its role in future wireless communication systems.

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Editorial Review

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