



Marco Baldi, Stefano Tomasin (Eds.)

# Physical and Data-Link Security Techniques for Future Communication Systems

Series: Lecture Notes in Electrical Engineering

- Describes applications of physical and data-link layer security techniques in many communication systems
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- Details innovative results on hot research topics
- Addresses both unconditional and computational security aspects

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This book focuses on techniques that can be applied at the physical and data-link layers of communication systems in order to secure transmissions against eavesdroppers. Topics ranging from information theory-based security to coding for security and cryptography are discussed, with presentation of cutting-edge research and innovative results from leading researchers. The characteristic feature of all the contributions is their relevance for practical embodiments: detailed consideration is given to applications of security principles to a variety of widely used communication techniques such as multiantenna systems, ultra-wide band communication systems, power line communications, and quantum key distribution techniques. A further distinctive aspect is the attention paid to both unconditional and computational security techniques, providing a bridge between two usually distinct worlds. The book comprises extended versions of contributions delivered at the Workshop on Communication Security, held in Ancona, Italy, in September 2014 within the framework of the research project "Enhancing Communication Security by Cross-layer Physical and Data-link Techniques", funded by the Italian Ministry of Education, Universities, and Research.

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