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	<ul> <li>2.4.2.1. Solutions of network coding2.4.3. Application to multihop sensor networks; 2.4.3.1. Multihop linear networks; 2.4.3.2. Sensor networks; 2.5. Conclusion; 2.6. Bibliography; Chapter 3. Switched Code for Ad Hoc Networks: Optimizing the Diffusion by Using Network Coding; 3.1. Abstract; 3.2. Introduction; 3.3. Diffusion in ad hoc networks; 3.4. Diffusion and network coding; 3.5. Switched code: incorporate erasure codes with network coding; 3.5.1. Definitions; 3.5.2. Coding function of switched code; 3.6. Decoding function of switched code; 3.7. Design and analysis of a new distribution 3.7.1. Analysis of switched distribution3.8. Conclusion; 3.9.</li> <li>Bibliography; Chapter 4. Security by Network Coding; 4.1. Introduction; 4.2. Attack models; 4.2.1. A type-II wiretap network; 4.4. Algebraic security criteria; 4.4.1. Note on random linear network coding; 4.4.2. Algebraic security; 4.4.3. The algebraic security criterion; 4.4.4. Algorithmic application of the criterion; 4.5. Conclusion; 4.6.</li> <li>Bibliography; Chapter 5. Security for Network Coding; 5.1. Introduction; 5.2. Attack models; 5.2.1. Eavesdroppers</li> <li>5.2.1.1. Internal eavesdroppers5.2.1.2. External eavesdroppers; 5.2.2. Active attackers; 5.2.3. Completely homomorphic encryption schemes; 5.2.4. Homomorphic ciphering schemes; 5.2.3.1. Two specific schemes; 5.2.3. Completely homomorphic encryption schemes; 5.2.4. The case of network coding using XOR; 5.2.4. Definitions of homomorphic encryption and confidentiality; 5.3.1. Alternatives for confidentiality; 5.4. Integrity and authenticity solutions</li> </ul>
	5.4.1. Definitions of homomorphic MAC and homomorphic hash functions
Sommario/riassunto	Network coding, a relatively new area of research, has evolved from the theoretical level to become a tool used to optimize the performance of communication networks - wired, cellular, ad hoc, etc. The idea consists of mixing "packets" of data together when routing them from source to destination. Since network coding increases the network performance, it becomes a tool to enhance the existing protocols and algorithms in a network or for applications such as peer-to-peer and TCP. This book delivers an understanding of network coding and provides a set of studies showing the improvement