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Nota di contenuto	Introduction -- Stochastic Petri Nets -- Performance Analysis of Opportunistic Schedulers using SPNs -- Performance Analysis of Device-to-Device Communications with Dynamics Interference using SPNs -- Packet Level Wireless Channel Model for OFDM System using SHLPNs -- Conclusions and Outlook.
Sommario/riassunto	This SpringerBrief presents research in the application of Stochastic Petri Nets (SPN) to the performance evaluation of wireless networks under bursty traffic. It covers typical Quality-of-Service performance metrics such as mean throughput, average delay and packet dropping probability. Along with an introduction of SPN basics, the authors introduce the key motivation and challenges of using SPN to analyze the resource sharing performance in wireless networks. The authors explain two powerful modeling techniques that treat the well-known state space explosion problem: model decomposition and iteration, and

model aggregation using stochastic high-level petri nets. The first technique assists in performance analysis of opportunistic scheduling, Device-to-Device communications with full frequency reuse and partial frequency reuse. The second technique is used to formulate a wireless channel mode for cross-layer performance analysis in OFDM system. Stochastic Petri Nets for Wireless Networks reveals useful insights for the design of radio resource management algorithms and a new line of thinking for the performance evaluation of future wireless networks. This material is valuable as a reference for researchers and professionals working in wireless networks and for advanced-level students studying wireless technologies in electrical engineering or computer science.