



## Short Introduction to the Book

The surge of mobile data services driven by new applications and smart devices has triggered the research innovation and study for the fifth-generation (5G) mobile communications system with a dramatic increase on system performances, such as 1 million connections per square kilometer, tens of Gbps per square kilometers of traffic volume density, and etc. To solve the capacity enhancement problem, small cells technologies have been proposed recently by reusing the spectrum resources efficiently. But, the capacity surge in urban areas and unevenly distribution of traffics in geography and time domains lead to new challenging problems for the optimization of small cell networks. Therefore, this book has proposed the capacity analysis and coverage self-optimization technologies with simulation results. And the interference mitigation technology is designed to minimize the inter-cell and intra-cell interference among multi-tier small cell networks. Finally, future research directions are described briefly.

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