

# Fundamentals of Massive MIMO

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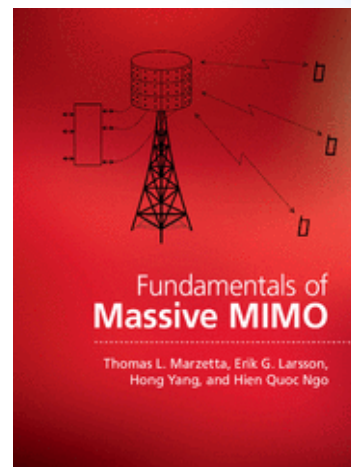
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Written by the pioneers of the concept, this is the first complete guide to the physical and engineering principles of Massive MIMO. Assuming only a basic background in communications and statistical signal processing, it will guide readers through key topics such as propagation models, channel modeling, and multi-cell performance analyses. The authors' unique capacity-bound approach will enable readers to carry out more effective system performance analysis and develop advanced Massive MIMO techniques and algorithms. Numerous case studies, as well as problem sets and solutions accompanying the book online, will help readers put knowledge into practice and acquire the skillset needed to design and analyze complex wireless communication systems. Whether you are a graduate student, researcher, or industry professional working in the field of wireless communications, this will be an indispensable guide for years to come.

1. Introduction; 2. Models and preliminaries; 3. Single-cell systems; 4. Multi-cell systems; 5. Power control principles; 6. Case studies; 7. The Massive MIMO propagation channel; 8. Final notes and future directions.

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'Massive MIMO has, over the past few years, become one of the hottest research topics in wireless, and will be a key component of 5G. This book is written by pioneers of the area in a systematic and lucid way, and works out the fundamentals without getting lost in the details. I highly recommend it to anybody working in this field.'

**Andreas Molisch,**  
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