



## Signal Processing, Channel Estimation and Link Adaptation in MIMO-OFDM Systems

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Cuvillier Verlag Jul 2008, 2008. Taschenbuch. Condition: Neu. Neuware - The emerging wireless communication systems, such as cellular communications systems and wireless networks, are changing the life style nowadays dramatically. The prospect of modern wireless communication systems is very attractive by declaring the ability of ubiquitous access to information with high-quality and high-speed service. The Orthogonal Frequency Division Multiplexing (OFDM) technique is one promising candidate for the 4<sup>th</sup> generation wireless systems, due to its merits of high flexibility and low equalization complexity for wideband wireless communication applications. To further enhance the communication system capacity and reliability, multiple antenna techniques can be integrated into OFDM systems. As a preliminary step, the physical characteristics of wideband radio channels and the channel modeling issue are addressed. The channel capacity with multiple antennas is presented by considering both cases of ideal and practical estimated channel state information (CSI) in the system. The fundamentals of the OFDM transmission technique are introduced. With the OFDM transmission structure the frequency-selective wideband radio channel is decomposed into a set of parallel subcarriers, and each subcarrier can be treated as a flat-fading narrowband channel. Several Multiple-Input-Multiple-Output (MIMO) technologies are discussed, in the scope of subcarrier-based MIMO encoding and decoding...



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