



## Robust Link Adaptation in Coded OFDM Systems

By Carsten Bockelmann

Shaker Verlag Apr 2012, 2012. Taschenbuch. Condition: Neu. Neuware - With the growing data rate demand in today's society driven by an ever present internet, video streaming and quickly growing smartphone usage, the optimization of communications systems gets increasingly important. So-called Link Adaptation concepts are usually applied to adapt the signal at the transmitter to the channel in order to use the channel's effect constructively rather than correct its destructive influence on the signal. However, traditional Link Adaptation schemes do not consider channel coding in their design. Still, channel codes are a very important and ubiquitous component in nearly all digital systems, which effects the overall error rate performance greatly. Thus, the aim of this thesis is to devise advanced Link Adaptation concepts that include channel coding into their design to further enhance the performance of multi-antenna OFDM systems. First, the necessary fundamentals are introduced including the overall system model for multiantenna OFDM systems, basics on channel coding and modulation as well as precoding and equalization techniques. Furthermore, the basic assumptions with respect to the transmission channel and channel state information (CSI) are detailed. Then a concise overview of the information theoretic concepts required to formulate the Link Adaptation algorithms...



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