



The 60 GHz Indoor Radio Channel - Overcoming the Challenges of Human Blockage

By Martin Jacob

Shaker Verlag Apr 2014, 2014. Taschenbuch. Condition: Neu. Neuware - Driven by the ever increasing capacity of storage devices and HD video streaming applications, there will be a strong demand for wireless multi-Gbps consumer applications soon. Due to its large available bandwidth and the high allowed transmit power, the unlicensed frequency range around 60 GHz is proving ideal for the realization of such systems. During the development process of 60 GHz multi-gigabit wireless systems, a detailed knowledge of the radio channel is essential. Taking into account research gaps, this dissertation makes a significant contribution to knowledge in the field of 60 GHz channel characterization. The focus is on human shadowing and its influence on the channel characteristics, which leads to a high and time-variant path loss. In order to provide realistic results, sophisticated radio channel models are required for the 60 GHz range. In particular, they should include information in the spatial domain at the receiver and the transmitter as well as take into account time-varying human shadowing. The angular information is necessary in this case to evaluate smart antenna systems. Such comprehensive models are not yet available and therefore represent a major outcome of this dissertation. Various propagation scenarios...



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