



Mário Marques da Silva, Américo Correia, Rui Dinis, Nuno Souto, João Carlos Silva, "Transmission Techniques for 4G Systems", CRC Press Auerbach Publications, ISBN: 9781466512337, FL, USA, November 2012 (<http://www.crcpress.com/product/isbn/9781466512337>);

Abstract: Fourth Generation wireless communication systems (4G) aim to allow peak data rates in the range of 1 Gbps for nomadic access and 100 Mbps for vehicular mobility. 4G aim to support current and emergent multimedia services, such as mobile TV, social networks and gaming, high definition television and video teleconference, multimedia messaging service, using the all over IP concept and with improved quality of service.

This book describes transmission schemes suitable for future broadband wireless systems and proposes and studies several advances in transmission techniques and receiver design to support emergent wireless needs for 4G requirements. New requirements include increasing throughputs and bandwidths, increased spectrum efficiency and network capacity, lower delays and round trip times.

4G services require extensive exploitation of advanced schemes such as Multiple Input Multiple Output (MIMO), base station cooperation, macro-diversity, inter-cell interference cancellation, multihop relay techniques, hierarchical constellations, as well as multi-resolution techniques. All of these principles are studied in this book, and advances are proposed for different propagation and multi-user environments, using block transmission techniques.