

Recent Results in Outdoor mm-wave and THz Channels

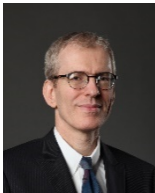
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Abstract

With the imminent large-scale deployment of 5G and the emergence of 6G research, there is an increased interest in understanding the propagation channels for the bands from 10-1000 GHz, which will play a vital role in those systems. This talk will first review some propagation basics, and then present a number of recent results in the measurement and deterministic simulation of such channels in outdoor environments, with an emphasis will be on double-directional and/or dynamic channel characteristics. We will discuss, among other aspects, how different streets have different pathloss coefficients, how passing cars alternate between being reflectors and blockers, how trees and other objects near windows critically impact outdoor-to-indoor propagation, and that some first THz measurements indicate surprisingly large angular dispersion.

Bio



Andreas F. Molisch is the Solomon-Golomb - Andrew and Erna Viterbi Chair Professor at the University of Southern California. His current research interests include wireless propagation channels, as well as MIMO, localization, new modulation methods, and joint communication, computation, and caching. He is a Fellow of the National Academy of Inventors, IEEE, AAAS, IET, Member of the Austrian Academy of Sciences, and recipient of numerous awards.