

Abstract:

Recent information theory research has shown that the rich-scattering wireless channel is capable of enormous theoretical capacities if the multipath is properly exploited. In this talk, we describe a wireless communication architecture known as vertical BLAST (Bell Laboratories Layered Space-Time) or V-BLAST, which has been implemented in realtime in the laboratory. Using our laboratory prototype, we have demonstrated spectral efficiencies of 20 - 40 bps/Hz in an indoor propagation environment at realistic SNRs and error rates. To the best of our knowledge, wireless spectral efficiencies of this magnitude are unprecedented, and are furthermore unattainable using traditional techniques.