Wireless Engineering Research and Education Center

Wireless Networks for the Sparse Domain: the Rural Problem

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Abstract

The proliferation of wireless communications networks and the growth of applications is arguably the most exciting aspect of telecommunications in the past decade. While capacity and speed are key issues that garner great attention and investment, the extension of these innovations to less populated areas tend to lag. The strategies and technologies that are being pursued for urban deployments are not necessarily optimum for sparsely populated domains, yielding an opportunity for additional research in devising mechanisms to achieve comparable levels of connectivity and throughput in rural areas. This talk will provide an overview of the challenges of the sparse domain, and highlights of research activities at Montana State University to overcome these obstacles. The talk will present work underway in rural area internet access and sensor networks, the use of relay networks, and developments in smart adaptive antennas and their incorporation in wireless networks.

Bio

Dr. Richard S. Wolff is the Gilhousen Chair in Telecommunications and professor of Electrical Engineering at Montana State University (MSU), Bozeman. His research interests are in novel applications of emerging technologies in telecommunications systems with particular focus on applications of wireless in rural areas. Prior to joining MSU, he spent 25 years in telecommunications research at Telcordia, Bellcore and Bell Labs, and taught physics at Columbia University. He earned a BS in Engineering Physics at the University of California, Berkeley and a Ph. D. in Physics at Columbia University. He has published over 100 papers, has been awarded three patents, and is a senior member of the IEEE.

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