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Abstract:

In a combination tutorial and research paper, spread-spectrum techniques for combating the effects of multipath on high-rate data transmissions via radio are explored. The tutorial aspect of the paper presents: 1) a heuristic outline of the theory of spread-spectrum antimultipath radio receivers and 2) a summary of a statistical model of urban/suburban multipath. The research section of the paper presents results of analyses and simulations of various candidate receivers indicated by the theory, as they perform through urban/suburban multipath. A major result shows that megabit-per-second rates through urban multipath (which typically lasts up to 5 μs) are quite feasible.

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