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Statistical Analysis and Characterization of Doppler Spectrum in Large Office Environment

W. Yamada, K. Nishimori, Y. Takatori, and Y. Asai

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Doppler spectra in a typical large office environment were measured during working hours and multiple Doppler spectra were statistically evaluated on the basis of a bell-shaped spectrum model. The results show that the channel in this measurement environment can be considered to be more quasi-static than described in TGn channel models. In addition, empirical formulas for Doppler spectra in large office environments are proposed.

Plane-wave and Vector-rotation Approximation Techniques for Reducing Computational Complexity in Simulating MIMO Propagation Channel by Ray-tracing

W. Yamada, N. Kita, T. Sugiyama, and T. Nojima

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This paper proposes techniques for simulating a multiple-input multiple-output (MIMO) propagation channel by ray-tracing to decrease the computational complexity. These techniques simulate a MIMO propagation channel by substituting the propagation path between a particular combination of transmitter and receiver antennas. Their estimation accuracy was evaluated through comparison with results calculated using imaging algorithms. They were found to simulate a MIMO propagation channel with low computational complexity, and better estimation accuracy was achieved using the proposed vector-rotation approximation technique than using the imaging algorithms.