TECHNOLOGY

Coding Techniques for Maximum Achievable Diversity in Space, Time, and Frequency for Broadband Wireless Communications

OVERVIEW

Researchers at the University of Maryland have developed three space-frequency (SF) code design methods that can guarantee reliable data transmissions at high data rates in broadband wireless communications. This is the first coding scheme to guarantee both full rate and full diversity in such communications. No other technology demonstrates the same functionality. This technology has potential applications in the design of the next generation broadband wireless communication systems.

Novel features include:

The inaugural design of full diversity SF codes from space-time (ST) codes.
The first systematic SF code design method that can guarantee both full rate and full diversity in multiple-input-multiple-output orthogonal frequency division multiplexing (MIMO-OFDM) wireless communication systems.
A space time frequency (STF) transmission scheme, capable of coding across multiple OFDM blocks, to further exploit all the available diversity in MIMO-OFDM systems; and
The proposed SF/STF code designs are applicable to the most general channel model that has been used in practice.

For more information, please contact the Office of Technology Commercialization, the University of Maryland, 301 405 3947 or by e-mail at otc@umd.edu.

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Additional Information

INSTITUTION

University of Maryland, College Park

PATENT STATUS

Patent(s) pending

LICENSE STATUS

Contact OTC for licensing information

CATEGORIES

- Microelectronics
- Information Technology

EXTERNAL RESOURCES

- US Patent 7,720,168

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