

An FSMC model for the ACM scheme with repetition coding in mobile WiMAX

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Abstract: To protect vital control information from deep fades, repetition coding is recommended in mobile WiMAX. This paper considers repetition coding as a maximum ratio combining process and proposes an expression for the coding gain and its effect on BER. A 10-state finite state Markov channel (FSMC) model is also proposed for the implementation of the adaptive modulation and coding (AMC) scheme in mobile WiMAX to maximize its spectral efficiency in a Rayleigh fading environment. ©2009 IEEE.

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Index Keywords: Adaptive modulation and coding; Adaptive modulation and coding schemes; Coding gains; Control information; Finite state Markov channels; Maximum ratio combining; Mobile WiMAX; Repetition coding; Spectral efficiencies; Wireless communications; Communication; Communication channels (information theory); Delta modulation; Interoperability; Rayleigh fading; Spectrum analyzers; Wimax; Adaptive modulation

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