Performance Of Equalized I-Q QPSK Over 2-Ray Rayleigh Fading

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Summary

In many wideband cellular systems, the channel experiences frequency selective fading. This paper evaluates the bit error rate (BER) performance of equalized I-Q QPSK over frequency selective Rayleigh fading channels. I-Q trellis codes were shown to possess excellent inherent minimum time diversity over flat fading Rayleigh channels. However, they have not been examined for frequency-selective fading channels, where channel equalization is required. In this work, I-Q QPSK systems performance over these channels employing a decision feedback equalizer (DFE) is evaluated. Very reliable communication over the mobile channel is obtained using I-Q QPSK combined with interleaving and adaptive equalization compared to the traditional Gray-mapped trellis codes