Improving RCPC codes in rate-adaptive atmospheric optical wireless communications systems

In this paper, we analyse the performance of rate-compatible punctured convolutional (RCPC) codes for wireless optical communications systems. For these environments, a novel hybrid RCPC coding scheme with a modified puncturing matrix is proposed based on the insertion of variable silence periods. This transmission technique achieves better bit-error rate results than conventional RCPC and convolutional coding schemes, in agreement to the obtained increase in the peak-to-average optical power ratio.

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