

基于混沌算法及压缩感知的图像压缩加密算法研究

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摘要：文章根据三个一维映射通过串联及并联构造了一维复合混沌系统，并提出结合压缩感知理论进行优化改进.利用两幅图像灰度级为 256 对改进后的算法进行仿真实验，仿真实验结果表明，改进后的算法具有良好的抗干扰能力，通过原图像和加密处理后的加密图像在直方图、相邻像素相关系数等对比分析可以看出，此次提出的加密算法具有非常好的效果.

关键词：混沌算法；压缩感知；图像加密；复合混沌映射

Research on image compression encryption algorithm based on chaos algorithm and compression perception

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Abstract: In this paper, a one-dimensional composite hybrid system is constructed in series and in parallel according to three one-dimensional mapping, and the optimization and improvement are put forward in combination with the compression-aware theory. The improved algorithm is simulated with two image gray levels of 256. The experimental and simulation results show that the improved algorithm has good anti-interference ability. Through the comparison and analysis of the original image and the encrypted image in histogram, the correlation coefficient of adjacent pixels and so on, it can be seen that the proposed encryption algorithm has a very good effect.

Key words: chaos algorithm; compression perception; image encryption; composite chaotic mapping

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