

学术探讨

基于混沌的图像复合置乱和多级信息隐藏算法

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摘要 提出一种基于混沌映射和灰度替换的图像复合置乱算法, 算法采用了一维logistic混沌序列对图像的行列分别置乱, 并与灰度替换相结合, 实验表明其具有较高的安全性。利用人眼视觉系统(HVS)的特性, 提出一种新的基于DCT的信息隐藏算法, 通过选取频域变换后的适当系数, 调整其尾数的奇偶, 达到嵌入秘密信息的目的, 并将其扩展为基于其他变换域的多级信息隐藏技术, 实验证明其具有隐藏量大、鲁棒性较强、盲提取的优点。

关键词 [混沌](#) [图像置乱](#) [信息隐藏](#) [盲提取](#)

分类号

Chaos-based image compound encryption and multi-level information-hiding algorithm

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Abstract

This essay has brought forward one kind of the image compound encryption algorithm which is based on chaotic mapping and gray substitution, and have adopted one-dimension logistic chaotic sequences to confuse the image ranks respectively, and has combined with gray substitution. The algorithm possesses high security. An new DCT-based information-hiding algorithm is proposed by making use of Human Visional System's (HVS) character, and choosing the appropriate modulus after image frequency region varies, adjusting its odd-even mantissa, to reach the purpose, and to expand it to multi-level information-hiding technology based on other varying region, the experiments testify it has possessed the merit of high capacity, strong robust and drawing blindly.

Key words [chaos](#) [image encryption](#) [information hiding](#) [drawing blindly](#)

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