

博士论坛

基于YCoCg的超光谱图像无损压缩算法研究

解成俊, 赵津燕

北京大学 数字图像处理研究所, 吉林132011

收稿日期 修回日期 网络版发布日期 2007-9-20 接受日期

摘要 提出了YCoCg和减影混合变换去除谱间冗余、2D-CDF (2, 2) DWT去除空间冗余, 该变换可完全由加法和移位完成便于硬件实现, 改进的EBCOT算法进行编码。实验结果表明, 无损压缩性能远好于JPEG-LS、WinZip、ARJ、DPCM、中国科学院一小组、NMST、MST的结果, 以JPL的Canal测试图像为例, 平均而言无损压缩比分别比上述算法提高了41%、36%、34%、29%、16%、14%、11%左右。

关键词 [YCoCg和减影混合变换](#) [冗余](#) [改进的EBCOT算法](#)

分类号

Research on lossless hyper-spectral image compression algorithm based on mixing tanform of YCoCg and substraction to eliminate spectral redundancy

XIE Cheng-jun,ZHAO Jin-yan

Digital Images Processing Institute,Beihua University,Jilin 132011,China

Abstract

This paper presents YCoCg and substraction mixing transform to eliminate spectral redundancy,while 2D-CDF (2,2) DWT is used to eliminate spatial redundancy.This transform has priority in hardware realization convenience,since it can be fully implemented by add and shift operation.Here improved EBCOT algorithm is used to finish compression coding.The experiment results show that in lossless image compression applications the method is much better than JPEG-LS,WinZip,ARJ,DPCM,the research result of a research team of Chinese Academy of Sciences,NMST and MST.Using Canal test images of JPL laboratory as a example data set,on the average the compression ratio using this algorithm increases about 41%,36%,34%,29%,16%,14%,11% respectively comparing to the above algorithms.

Key words [YCoCg and substraction mixing transform](#) [redundancy](#) [improved EBCOT algorithm](#)

DOI:

通讯作者 解成俊 [E-mail: xcjciom@yahooc.om.cn](mailto:xcjciom@yahooc.om.cn)

扩展功能

本文信息

▶ [Supporting info](#)

▶ [PDF\(1193KB\)](#)

▶ [\[HTML全文\]\(0KB\)](#)

▶ [参考文献](#)

服务与反馈

▶ [把本文推荐给朋友](#)

▶ [加入我的书架](#)

▶ [加入引用管理器](#)

▶ [复制索引](#)

▶ [Email Alert](#)

▶ [文章反馈](#)

▶ [浏览反馈信息](#)

相关信息

▶ [本刊中 包含 “YCoCg和减影混合变换” 的相关文章](#)

▶ [本文作者相关文章](#)

· [解成俊](#)

· [赵津燕](#)