MULTISTAGE ALGORITHM FOR LOSSLESS COMPRESSION OF MULTISPECTRAL REMOTE SENSING IMAGES

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ABSTRACT:

A preliminary comparison between loss and lossless compression approaches for the remote sensing data processing was made. A three-stage lossless compression algorithm of multispectral remote sensing images based on wavelet transformations and intrabands correlation is proposed and developed. It allows one to consider peculiarities of remote sensing data and to increase the compression ratio of the algorithm. The paper describes a modification of the compression algorithm aimed at considerable improvement of computational performance and based on bands trimmed enumeration and data selective use. A research of the three-stage algorithm performance was carried out in comparison with the universal compression algorithms such as WinRar, WinZip and JPEG2000 using data from various remote sensing systems showing to some extent a superiority in the compression ratio, as well as some insignificant lag of the computational performance was identified.

TOPIC: Image processing and pattern recognition
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