Increasing the compression efficiency and visual quality in hierarchical image compression by pre-filtering

M.V. Gashnikov[1,2], N.I. Glumov[1,2]
[1] Image Processing Systems Institute
[2] Samara State Aerospace University named after academician S.P. Korolev

Abstract

In this paper, the authors propose an algorithm for increasing the compression efficiency and visual quality during hierarchical compression. The algorithm is based on the use of pre-filtering that brings an image to a form that is more adapted to hierarchical compression. The developed algorithm was studied experimentally, the advantage of the scheme with pre-filtering over the basic method in terms of compression coefficient and visual quality was shown.

Keywords: image compression, pre-filtering, hierarchical compression.

Citation: Gashnikov MV, Glumov NI. Increasing the compression efficiency and visual quality in hierarchical image compression by pre-filtering. Computer Optics 2005; 28: 108-111.

Access full text (in Russian)

References

[1] Alexandrov VV, Gorsky ND. Image representation and processing: a recursive approach. Leningrad: "Nauka" Publisher; 1985; 192 p.
[2] Kortman CM. Redundancy reduction – A practical method of data compression, Proc IEEE 1967; 55(3): 253-263.
[3] Gashnikov MV, Glumov NI, Sergeev VV. Information technology for image compression in online remote sensing systems. Bulletin of the Samara Scientific Center of RAS 1999; 1: 99-107.
[4] Gashnikov MV, Glumov NI, Sergeyev VV. Control of compression ratios during hierarchical image compression. Pattern Recognition and Image Analysis 2005; 15(1): 170-171.
[5] Soifer VA, ed. Methods of computer image processing [In Russian]. Moscow: "Fizmatlit" Publisher; 2001. ISBN: 5-9221-0270-2.