

Wavelet filtering with two parametric threshold functions: selection of the function and justification of optimal parameters

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Abstract: This paper studies the optimization of wavelet filtering algorithms with two-parameter threshold functions. Optimization of wavelet filtering algorithm is performed in two directions: a) optimization by selecting of the best function of the threshold used in practice functions; b) optimization by evaluating of the optimal parameters of the best threshold function.

Key words: estimation, wavelet transform, filtering

REFERENCES

- [1] Fodor, I. K., Kamath C. Denoising through Wavelet Shrinkage: An Empirical Study. SPIE Journal on Electronic Imaging. 2003. vol. 12, N. 1, pp. 151-160.
- [2] Voskobojnikov Ju.E., Gochakov A.V. Ocenivanija optimal'nyh porogovyh velichin v algoritmah vejvlet-filtracii izobrazhenij. Avtometrija. 2011. t. 47. №2. S. 3-12.
- [3] Voskobojnikov Ju.E., Gochakov A.V., Kolker A.B. Fil'tracii signalov i izobrazhenij: Fur'e i vejvlet algoritmy (s primerami v Mathcad) Novosibirsk: NGASU (Sibstrin), 2010. 188 s.
- [4] Voskobojnikov Ju.E. Vejvlet-filtracii signalov i izobrazhenij (s primerami v Mathcad) Novosibirsk: NGASU (Sibstrin), 2015. 196 s.
- [5] Voskobojnikov Ju.E., Gochakov A.V. Postroenie algoritmov vejvlet-filtracii s dvuhparametricheskimi porogovymi funkcijami. Avtometrija. 2012. t. 48. N 1. P. 17-29.Mallat S. A theory of multiresolution signal decomposition: the wavelet representation. IEEE Trans. Pattern Anal. Machine Intell. 1989. v.11. N 9. P. 674-693.
- [6] Gao H-Y, Bruce A.G. Waveshrink with firm shrinkage. Statistica Sinica. 1997. V. 7. P. 855-874.
- [7] Lin Y, Ma Y, Liu F, Zhang X. The research based on genetic algorithm of wave image denoising threshold of medicine. Journal of chemical and pharmaceutical research. 2014.



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