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APPLICATION OF WAVELET TRANSFORM FOR DENOISING OF X-RAY IMAGES IN DIGITAL RADIOGRAPHY

X-ray images denoising is an emerging problem in modern radiography systems. Purpose of present research was to investigate the efficiency of the application of wavelet transform for denoising x-ray images in digital radiography. The dependence of the SNR on major transform and filtration parameters was measured, namely wavelet type, thresholding method and threshold level selection way. Denoising results obtained from wavelet filtration were compared with the results of traditional noise filtration in fourier domain.

It was found that denoising quality strongly depends on the wavelet type, thresholding method and less depends on threshold magnitude. Reasonable selection of wavelet transform parameters for radiography image allowed to improve SNR about 40% while fourier domain filtration resulted in only 8% improvement of SNR.

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