

عنوان مقاله:

PLATELETS FOR DENOISING OF SPECT IMAGES: PHANTOM AND PATIENT STUDY

محل انتشار:

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خلاصه مقاله:

In this study the evaluation of a Platelet-based Maximum Penalized Likelihood Estimation (MPLE) for denoising SPECT images was performed and compared with other denoising methods such as Wavelets or Butterworth filteration. Platelet-based MPLE factorization as a multiscale decomposition approach has been already proposed for better edges and surfaces representation due to Poisson noise and inherent smoothness of this kind of images .We applied this approach on both simulated and real SPECT images.For Nema phantom images, the measured noise levels before (2.1732) and after denoising with Platelet-based MPLE approach (0.1399) was found.In patient study for 32 cardiac SPECT images, the difference between noise level and SNR before and after applying approach were (Mb=3.7607, SNRb=9.7762, Ma=0.7374, SNRa=41.0848). Thus the Coefficient Variance (C.V) of SNR values for denoised images with this algorithm incompare with filteration with Butterwoth filter, 145/33% was found.For 32 brain SPECT images considering better homogenous image, improvements in SNR, better radioactive uptake in target organ and reduction of interfering activity from background radiation in compare with that .of other conventional denoising methods

کلمات کلیدی: Denoising, Image Approximation, SPECT, Platelets, MPLE

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