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Reduction of Speckle Noise in Echocardiographic Images: A Survey

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Abstract : Speckle noise is a main characteristic of cardiac ultrasound images, it corresponding to grainy appearance that degrades the image quality. For this reason, the ultrasound images are difficult to use automatically in clinical use, then treatments are required for this type of images. Then a filtering procedure of these images is necessary to eliminate the speckle noise and to improve the quality of ultrasound images which will be then segmented to extract the necessary forms that exist. In this paper, we present the importance of the pre-treatment step for segmentation. This work is applied to cardiac ultrasound images. In a first step, a comparative study of speckle filtering method will be presented and then we use a segmentation algorithm to locate and extract cardiac structures.

Keywords : medical image processing, ultrasound images, Speckle noise, image enhancement, speckle filtering, segmentation, snakes

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