# Digital Images Enhancement and Border Detection In Ventricular MRI Image


## 劉邦彥、傅家啟

E-mail: 8809533@mail.dyu.edu.tw



**ABSTRACT**

MRI system is noninvasive and provides the clear images to diagnosis. In cardiovascular system, however, MR images require manual trace method to identify the endocardial border and the epicardial border in left ventricular. Because dynamic organs generate a huge number of images, it takes long time to identify them by using the manual trace method. To provide satisfactory clinical performance, an automatic endocardial and the epicardial border detection algorithm is required. In this research, we provide an algorithm of wavelet-based images enhancement. One hundred and sixty images from ten volunteers and divide into three groups：(1)：borders are manual tracing as a compare group, (2)：the automatic border detection algorithm is directly without images enhancement . (3)：the automatic border detection algorithm was applied after the images are enhanced by WT-based method. Finally we use the Hausdorff Distance to measure the performance of the images with or without image enhancement. Experimental results show that the endocardial profiles and the epicardial profiles can be effectively enhanced by the wavelet-based technique.



Keywords : Image Enhancement ; Histogram Equalization ; Wavelet Transform ; Border Detection ; Dynamic Programming


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