



International Journal of Biomedical Imaging

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A Review on MR Image Intensity Inhomogeneity Correction

Zujun Hou

Biomedical Imaging Lab., Singapore Bioimaging Consortium, 30 Biopolis Street, Matrix #07-01, 138671, Singapore

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Abstract

Intensity inhomogeneity (IIH) is often encountered in MR imaging, and a number of techniques have been devised to correct this artifact. This paper attempts to review some of the recent developments in the mathematical modeling of IIH field. Low-frequency models are widely used, but they tend to corrupt the low-frequency components of the tissue. Hypersurface models and statistical models can be adaptive to the image and generally more stable, but they are also generally more complex and consume more computer memory and CPU time. They are often formulated together with image segmentation within one framework and the overall performance is highly dependent on the segmentation process. Beside these three popular models, this paper also summarizes other techniques based on different principles. In addition, the issue of quantitative evaluation and comparative study are discussed.

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