

Abstract Submitted
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Bioimaging Analysis Using Physical and Computational Simulations RICHARD KYUNG, SEUNG JUN LEE, Choice Research Group — Magnetic Resonance Imaging is a commonly used technique that produces an image of the subjects anatomy through radio waves, magnetism and computers. The data for the image is first transmitted into a k-space diagram, which is changed into an image through the Fourier Transformation. In the paper, various filter functions were tested using the a computer program as low pass filters. All types of functions showed their distinct features and were compared to one another. Finally, taking many factors into account, an efficient new filter was proposed and tested. While filters were applied on the full K-space in order to find a most efficient filter, which can be used to produce best MRI image, a nonconventional approach was used in the image analysis. Original MRI image domain was transformed into k-space using Fourier Transform to determine an efficient filter that will produce optimal image. The proposed filters were different from the rectangular (square) function, Gaussian function, and circle function, but trial and error were done on the new filter to have all the advantages or properties of the old functions.

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