

Abstract Submitted
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Bio-Image Resolution Enhancement Using a Gaussian Function

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Using various filters to produce an MRI image of a human brain, we gather data on ways to decrease the size of a frequency domain in a relatively large k-space. We are able to create the image in a smaller scale by using MRI filters based on proposed Gaussian equations instead of those based on common Gaussian function and square equations. Unlike a square equation, Gaussian equation allows k-space data to be recorded in more directions. As the exponential power changes, the filter can capture more or less data in k-space data. Therefore determining that the best image is shown when a certain number is chosen. Classically, when the data located at the center of K-space is selected, the Inverse Fourier Transformation provides a clear image. However, when the data located at the periphery of K-space is selected, the resulting image only contains a clear border with no details. This research, by combining the observed data the proposed equation, is conducted to observe an improved algorithm that not only increases the MRI image quality, but also decreases the time taken to produce the image.

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