

عنوان مقاله:

Evaluation of Geometric Distortion Artifacts in Echo Planar Imaging

محل انتشار:

کنفرانس کشوری علوم پرتوی: نقش پرتو در تشخیص و درمان (سال: 1397)

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خلاصه مقاله:

Purpose: Echo planar imaging (EPI) has become a common acquisition method for high temporal resolution applications such as functional MRI (fMRI) and diffusion weighted imaging (DWI). Using the distortion phantom, the distortion in two dimensional images can be detected and corrected. **Material and Methods:** The magnetic resonance imaging of the phantom was performed on the 3 Tesla Siemens Prisma Model to measure the geometric distortion using the network pattern. The echo planar protocol was used to evaluate image distortion. Moreover, image distortion was evaluated by measuring the distance between the edges using a MATLAB (version 8.3.0.532, MathWorks) program. **Result:** The average error obtained in a 25 cm field of view was 25 pixel in x and 9 pixel in y directions (each pixel was 1.024 mm), which is due to the shimming problem in the MRI device. **Conclusion:** According to the results, the geometric error rate is more than usual and indicates a problem with the inhomogeneity of B0 or shim coils of the machine, and therefore, shimming of the machine must be done.

کلمات کلیدی:

Echo Planar Imaging (EPI), Geometric Distortion, Phantom

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