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## Corrections of Eddy-Current Induced Distortions in Diffusion Tensor Imaging

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**목적** : A newly developed post-processing method of diffusion tensor imaging (DTI) is proposed with preliminary results in both phantoms and in vivo brain scans. The standard DTI modality, echo-planar imaging (EPI) provides high speed but suffers from susceptibility artifacts. To eliminate corresponding errors, a new correction algorithm is applied in which the diffusion gradient's polarity is alternated in successive cycles of the sequence.

**대상 및 방법** : As a part of the periodic check procedures, MRI may spend evaluating magnetic field homogeneity ( $H_B$ ) by placing a sample in the magnet and determining its resonant frequency at hundreds of different positions. Diffusion weighted MR data were acquired from 5 healthy volunteer, using 1.5T Siemens Avanto (Siemens, Erlangen, Germany) with actively shielded magnetic field gradients (maximum amplitude, 40mT/m). The diffusion weighted images were corrected for gradient tables.

**결과** : EC Bo terms may cause image shifts along the phase encode direction of at least 1.5 pixels, when the maximum DW gradient magnitude is applied on a single gradient axis. When the DW gradient is applied along the slice direction, EC self-terms can cause image shifts of at least 1.1 pixel for a slice 50 mm away from the magnet isocenter.

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