

Echo Planar Imaging (EPI) Distortion Correction for Accurate Registration of Perfusion and Anatomical MRI

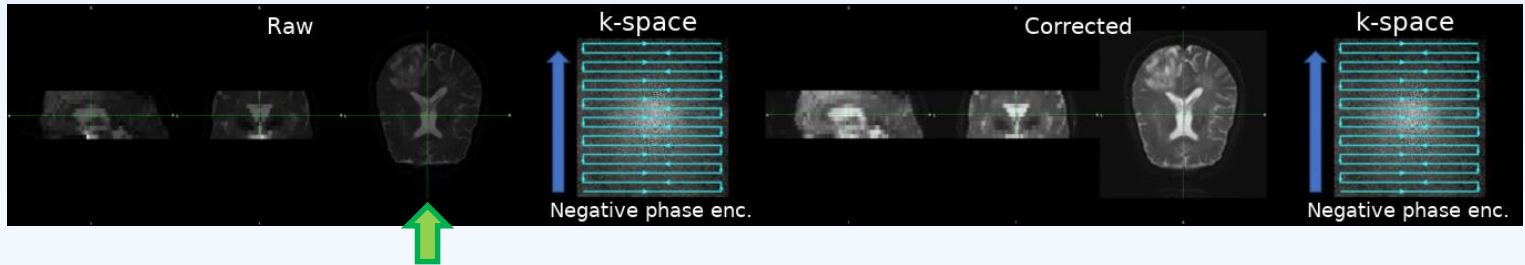
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Metode og Resultat

- Forskjellig magnetisk susceptibilitet i vev: Geometriske- og intensitetsartefakter
- Avhengig retning faseinnkoding (k-rom)
- EPI u./m. FSL topup og EPIC korreksjon

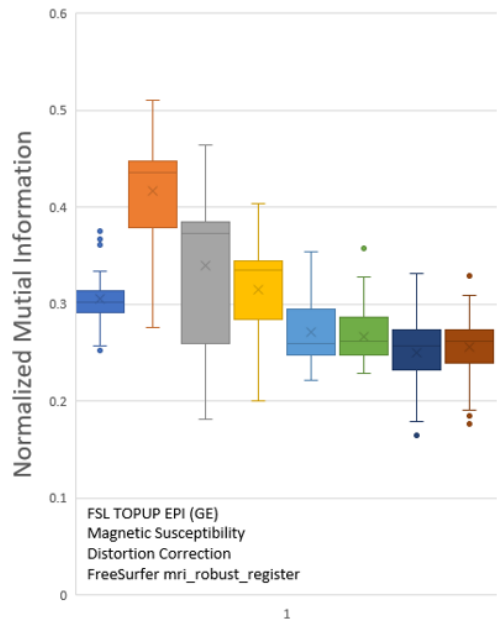


- Data: 46 spinn-ekko + gradient-ekko EPI par, glioblastom
- Registrering: 3D FLAIR via FreeSurfer
- Normalized Mutual Information (NMI) likhetsmål
- Resultat: Spinn-ekko har jevnt høyere NMI enn gradient-ekko uavhengig korreksjon

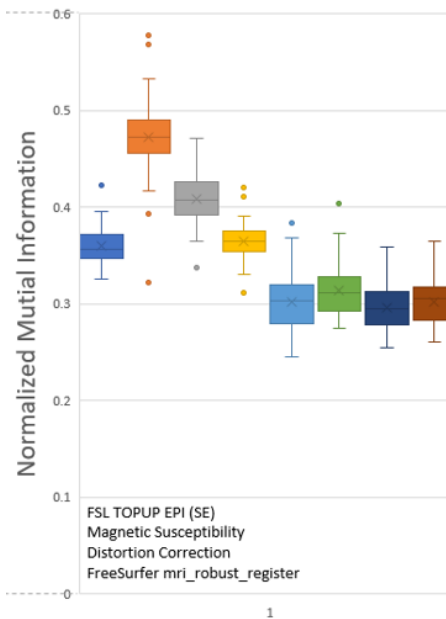
Konklusjon

- Forbedret intra-EPI NMI, men ikke kryssmodal 3D FLAIR -> EPI NMI. Spinn-ekko best egnet for koregistrering uavhengig korreksjon

FLAIR 3D & Gradient Echo NMIs w./w.o. topup + coreg, n = 46



FLAIR 3D & Spin Echo NMIs w./w.o. topup + coreg, n = 46



- Raw neg. to pos. phase
- EPI Normalized Mutual Inrofmation (NMI)
- Corr. neg. to pos. phase
- EPI Normalized Mutual Inrofmation (NMI)
- Raw to corr. neg. phase
- EPI Normalized Mutual Inrofmation (NMI)
- Raw to corr. pos. phase
- EPI Normalized Mutual Inrofmation (NMI)
- FLAIR 3D (reg.) to raw. neg. phase EPI Normalized Mutual Inrofmation (NMI)
- FLAIR 3D (reg.) to raw. pos. phase EPI Normalized Mutual Inrofmation (NMI)
- FLAIR 3D (reg.) to corr. neg. phase EPI Normalized Mutual Inrofmation (NMI)
- FLAIR 3D (reg.) to corr. pos. phase EPI Normalized Mutual Inrofmation (NMI)