

Supplementary Information

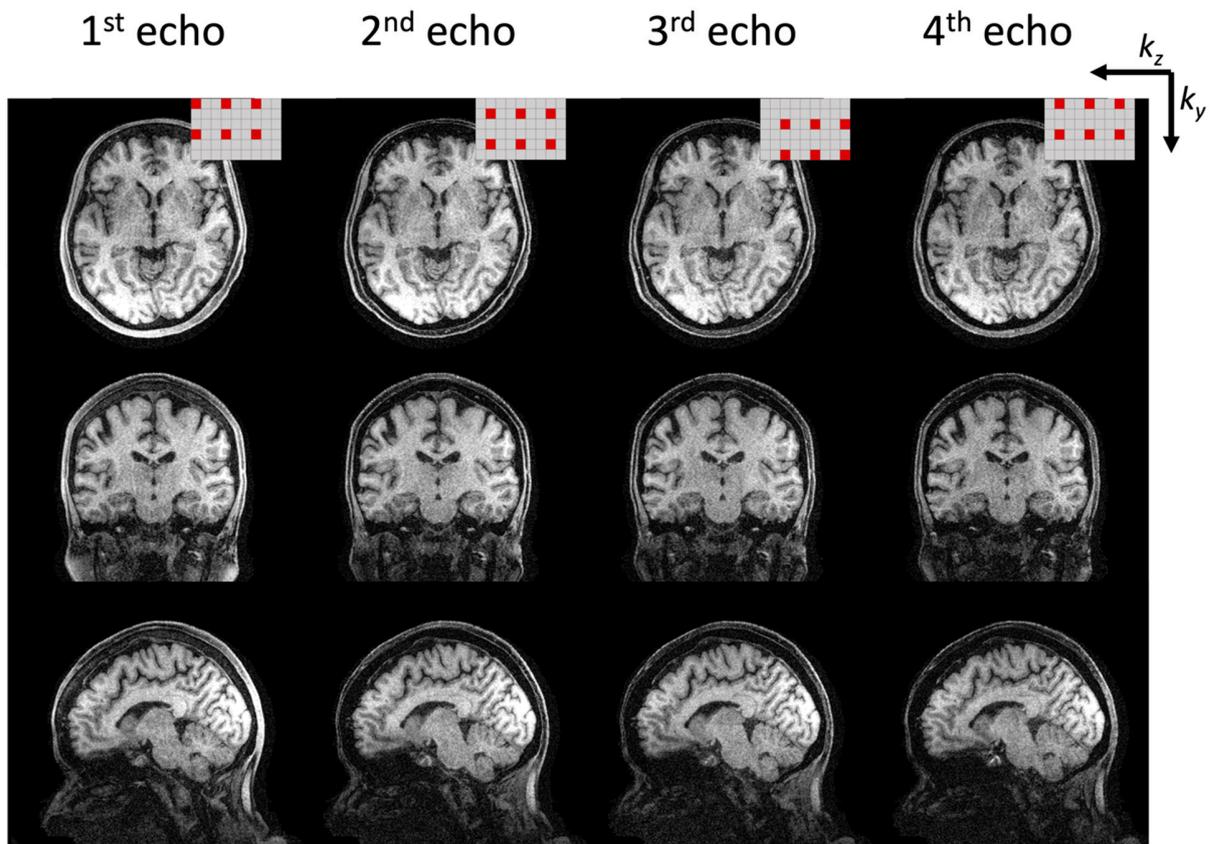


Figure S1. Each echo images of wave-MoDL at R=3x3-fold acceleration.

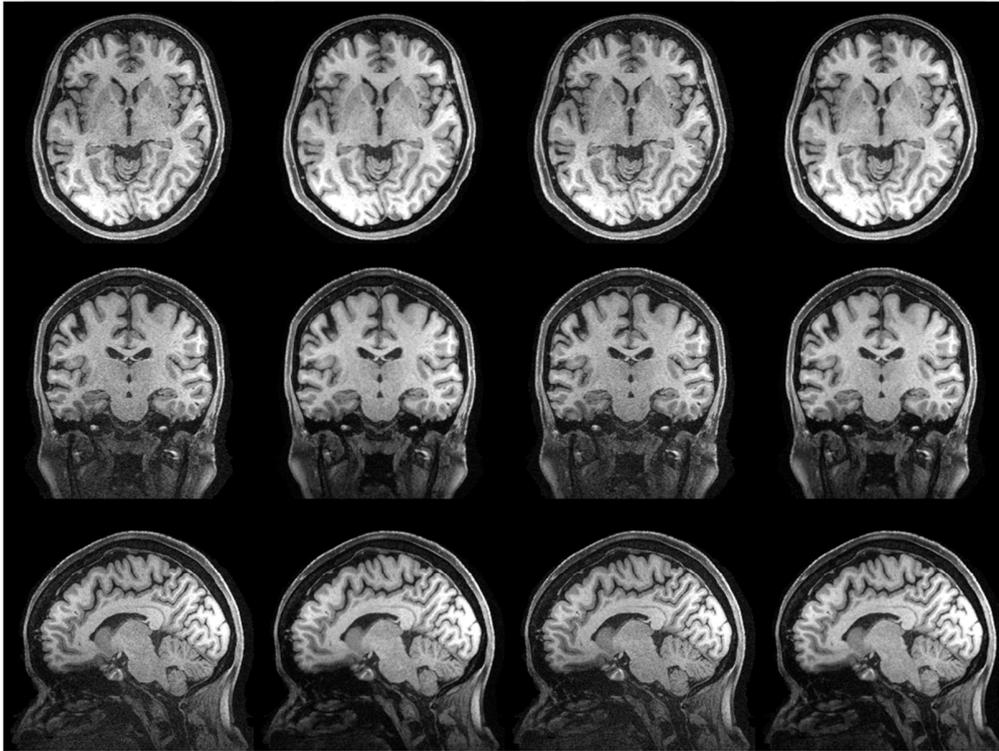
2:15-minute MEMPRAGE @ 0.8mm, R3x2

SENSE

MoDL

Wave-CAIPI

Wave-MoDL



NRMSE : 11.91 %

8.42 %

9.40 %

7.58 %

Figure S2. The proposed method on the MEMPRAGE database at R=3x2-fold and 0.8 mm isotropic voxel resolution. Echo images were combined with root mean squared. NRMSEs were calculated for the entire testing database.

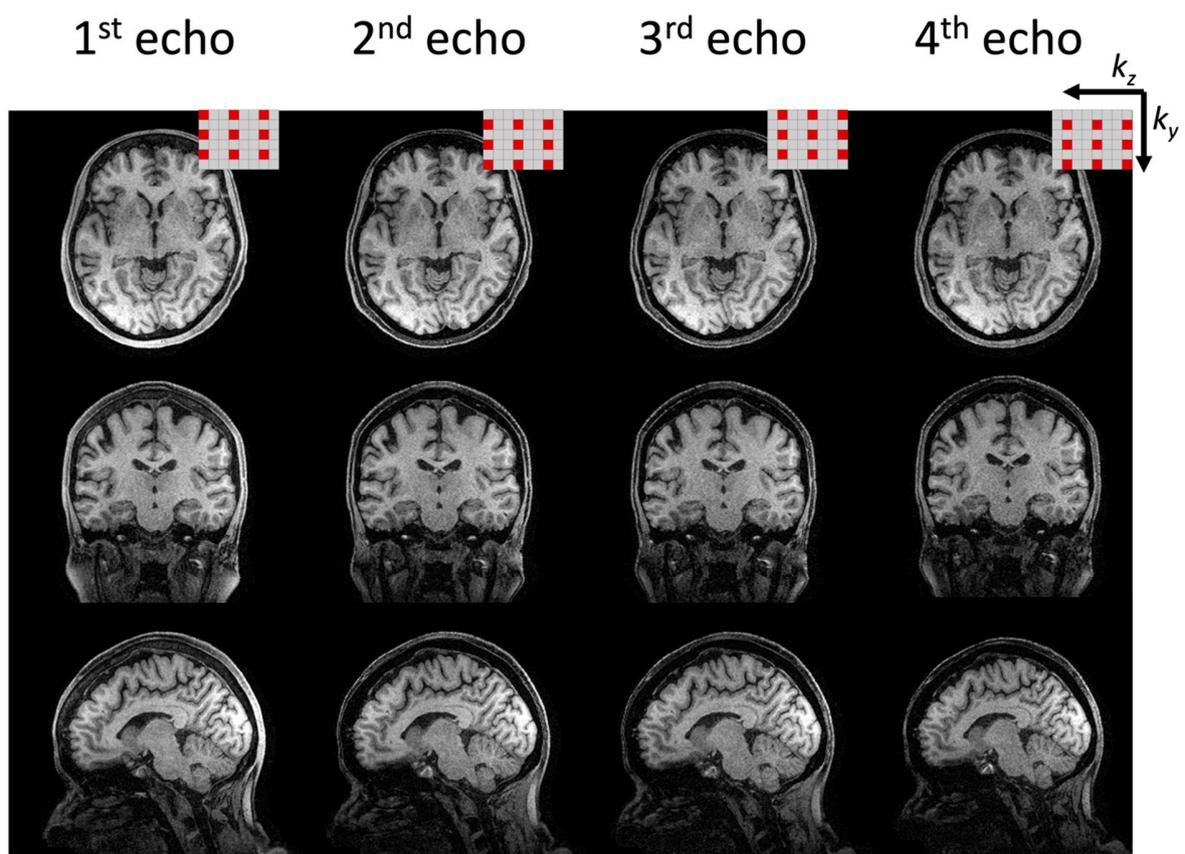


Figure S3. Each echo image of wave-MoDL at R=3x2-fold acceleration.

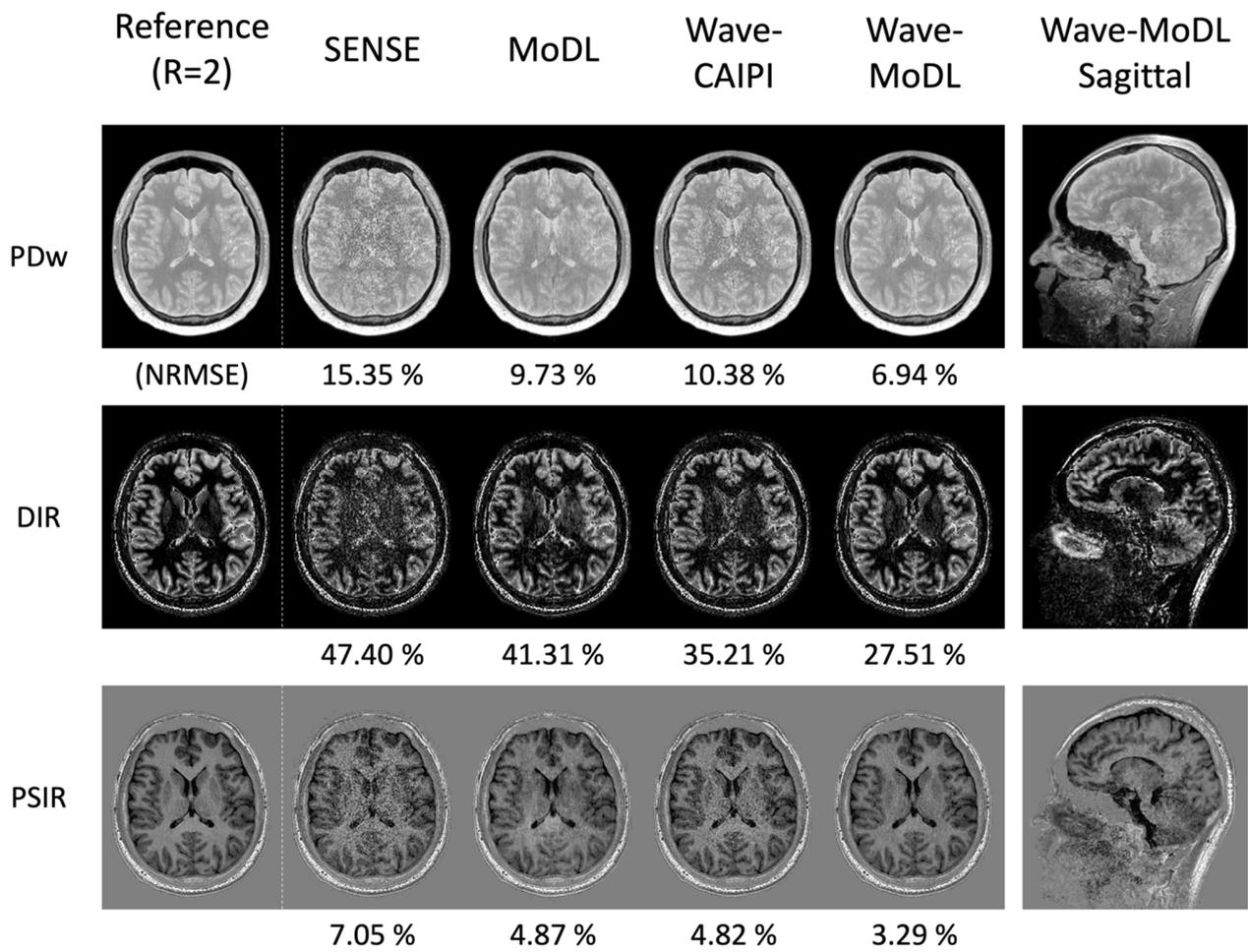
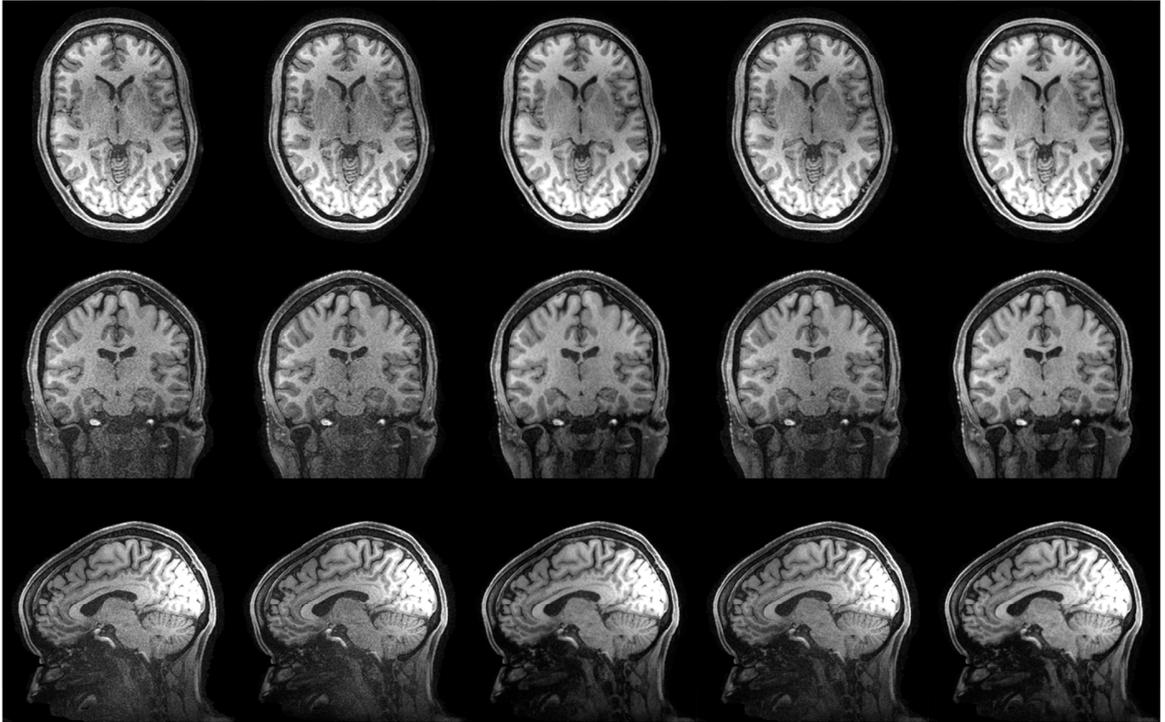


Figure S4. The synthesized double inversion recovery (DIR), and phase-sensitive inversion recovery (PSIR) images at R=4x3-fold acceleration.

1:30-minute MEMPRAGE @ 0.8mm, R3x3

Wave-CAIPI Wave-LORAKS U-net denoiser (1) U-net denoiser (2) Wave-MoDL



NRMSE :	16.41 %	13.44 %	9.86 %	11.19 %	11.18 %
SSIM :	0.8453	0.8683	0.7682	0.8235	0.9104
# params :	-	-	34,618,090	105,115	91,458

Figure S5. Wave-CAIPI, wave-LORAKS, U-net denoisers, and wave-MoDL on the MEMPRAGE database at R=3x3-fold and 0.8 mm isotropic voxel resolution. Echo images were combined with root mean squared. NRMSEs and SSIMs were calculated for the entire testing database.