

Supplementary Material for Physics-Informed Deep Learning for Motion-Corrected Reconstruction of Quantitative Brain MRI

Hannah Eichhorn^{1,2,*}, Veronika Spieker^{1,2}, Kerstin Hammernik², Elisa Saks³,
Kilian Weiss⁴, Christine Preibisch³, and Julia A. Schnabel^{1,2,3,5}

¹ Institute of Machine Learning in Biomedical Imaging, Helmholtz Munich, Germany

² School of Computation, Information & Technology,
Technical University of Munich, Germany

³ School of Medicine & Health, Technical University of Munich, Germany

⁴ Philips GmbH Market DACH, Hamburg, Germany

⁵ School of Biomedical Engineering & Imaging Sciences, King's College London, UK

*hannah.eichhorn@tum.de

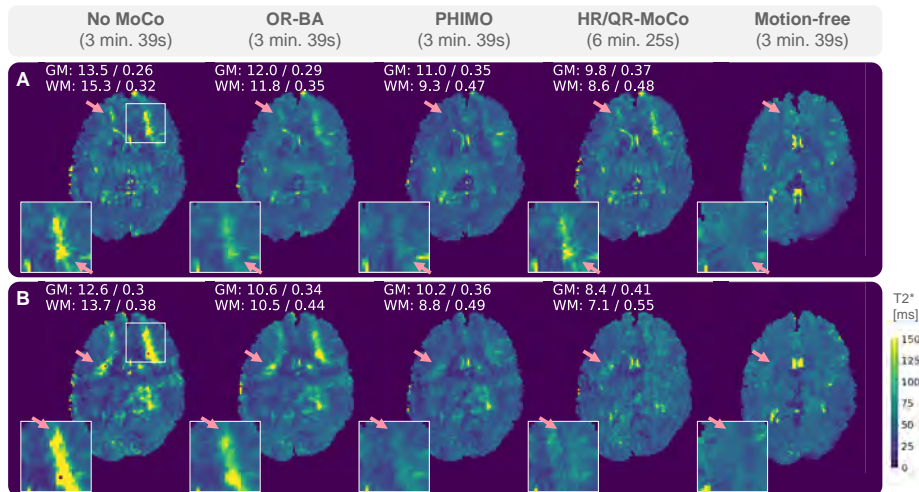


Fig. S1. $T2^*$ maps corresponding to the exclusion masks in Fig. 2 of the main article, showing slice 15 (A) and slice 16 (B) of the subject performing the motion timing experiment. From left to right: motion-corrupted (No MoCo), OR-BA, proposed PHIMO, HR/QR-MoCo and motion-free reference. Pink arrows indicate (suppressed) motion artifacts. Gray/white matter (GM/WM) MAE values in ms as well as SSIM values relative to the motion-free maps are indicated in the top left corner.

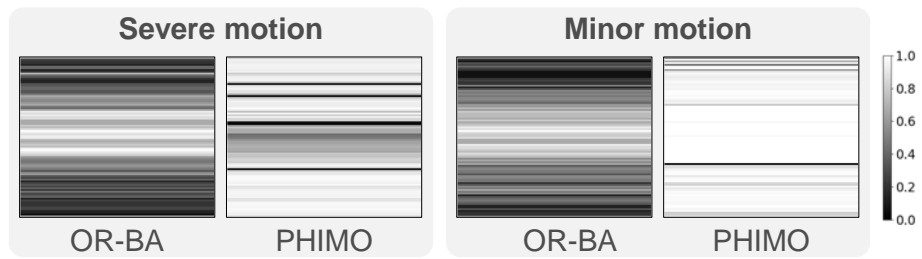


Fig. S2. Exclusion masks derived from OR-BA and PHIMO, corresponding to the example T2* maps in Fig. 3 of the main article for more severe motion (left) and minor motion (right). Note that these subjects were instructed to move at random time points during the acquisition and not given exact timing instructions like the example in Fig. S1. Thus, no reference mask is available for these subjects.