

Supplementary Materials

Sequence	Resolution (mm ³)	FOV (mm ²)	Slices	TR (ms)	TE (ms)	FA	Voltage	TA
Sagittal TFL	2.4x2.4x2.5	340x208	- 2 slice groups of 28 slices - 2.5 mm slice thickness and 2.5 mm slice gap	34420	2.31	- pre-sat FA= 90° (80° for Magnetom sites) - excitation FA= 10°	reference voltage calibrated by the scanner	1m10s
Sagittal TFL	2.4x2.4x2.5						V_{opt}	1m10s
Sagittal DREAM	4.1x4.1x2.5	384x178	11 slices of 2.5 mm slice thickness	6000	TE1/TE2 = 2.04/3.18	FA1/FA2 = 50/6°		1m08s
Sagittal DREAM	2.5x2.5x2.5	200x200						1m08s
Sagittal DREAM	2.5x2.5x2.5						$(2/3) * V_{opt}$	1m08s
Sagittal DREAM	2.5x2.5x2.5						$1.5 * V_{opt}$ or $V_{HW,limit}$ (whichever was lower)	1m08s

Table S1: Acquired B₁⁺ mapping sequences and their parameters. “||” indicates that the field is identical to that of the above-row, V_{opt} is the optimal reference voltage, and $V_{HW,limit}$ is the hardware limit voltage for a given coil.

Sequence	Resolution (mm ³)	FOV (mm ²)	Slices	TR (ms)	TE (ms)	FA	Phase Encode	Voltage	TA
Sagittal coilQA	1.5x1.5x2.0	384x384	13 slices of 2.0 mm slice thickness with 20% slice gap	30	6	12°	H>F	V_{opt}	3m20s
Sagittal coilQA	1.5x1.5x2.0	192x192							1m40s
Axial coilQA	0.5x0.5x5.0		7 slices of 5.0 mm slice thickness with 300% slice gap				R>L		2m41s
Sagittal 3D GRE	2.0x2.0x2.0	384x288	44 slices of 2.0 mm slice thickness without slice gap	550	3.8	30°	R>L		1m21s

Table S2: Acquired B₁⁺ mapping sequences and their parameters. “||” indicates that the field is identical to that of the above-row, and V_{opt} is the optimal reference voltage.

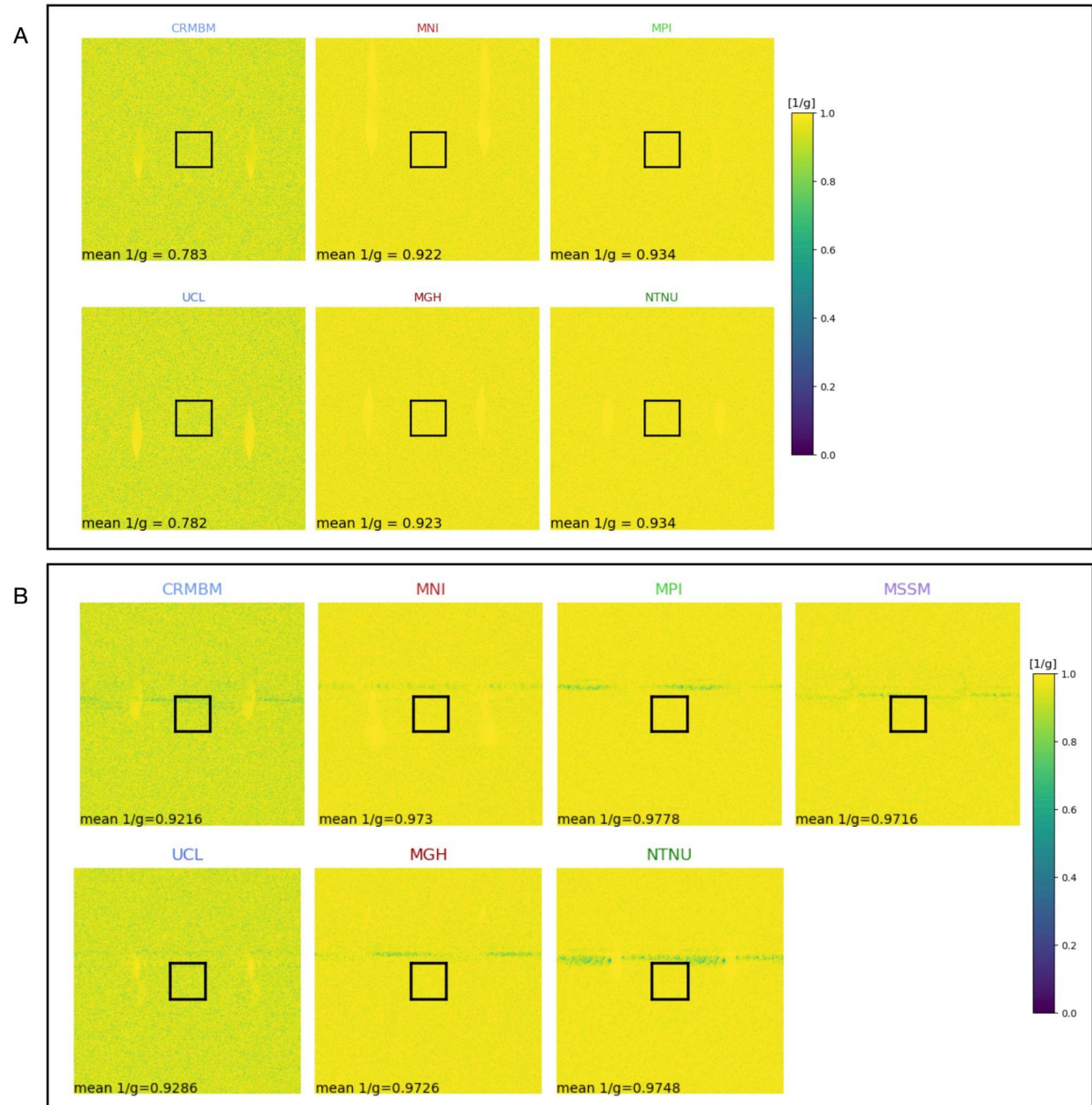


Figure S1: (A) $1/g$ maps with $R_{L/R} = 2$ of Spinoza at each site, except for MSSM. (B) $1/g$ factor maps with $R_{L/R} = 2$ for a single representative subject across all sites (Subject 2).

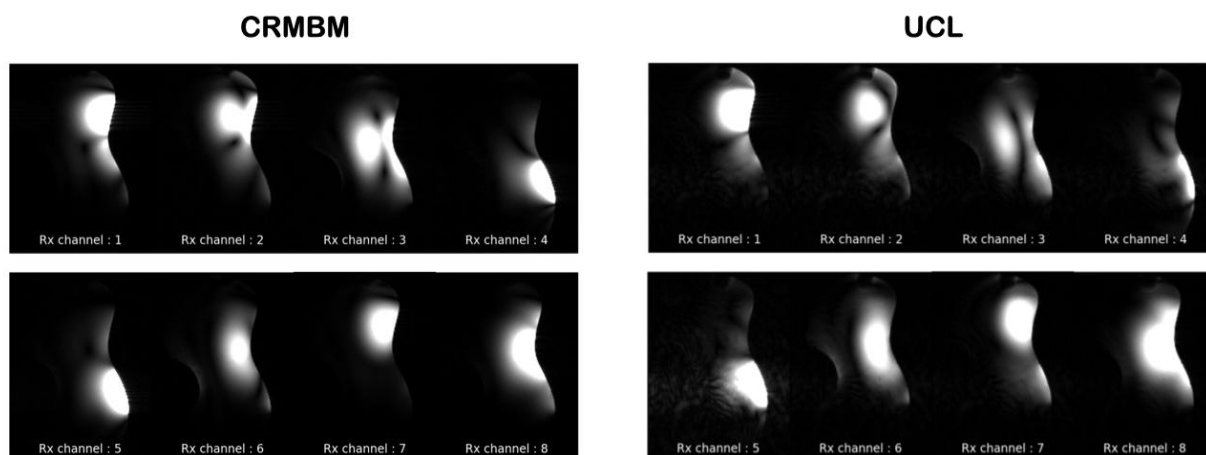


Figure S2: Individual channel GRE phantom sagittal images for CRMBM and UCL (Subject 2).

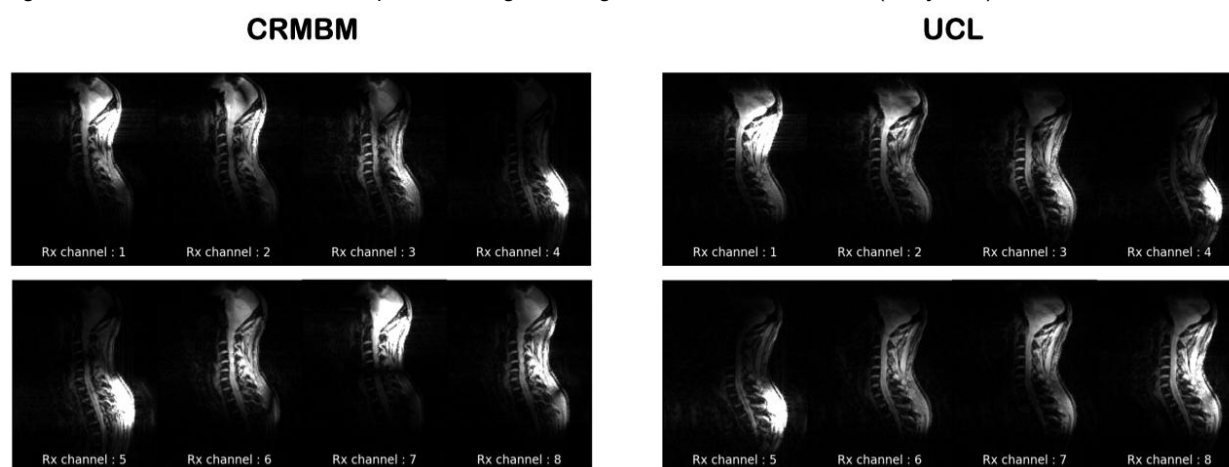


Figure S3: Individual channel GRE in-vivo sagittal images for CRMBM and UCL (Subject 2).

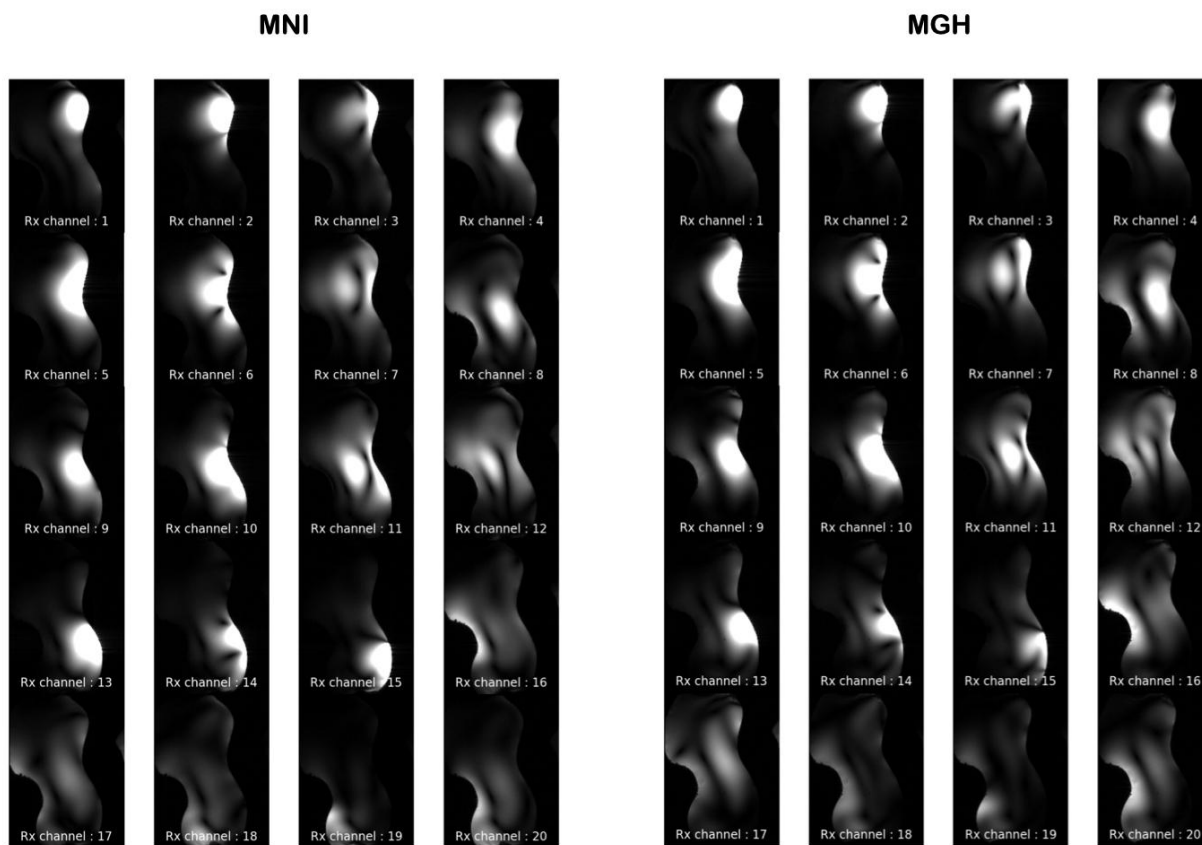


Figure S4: Individual channel GRE phantom sagittal images for MNI and MGH (Subject 2).

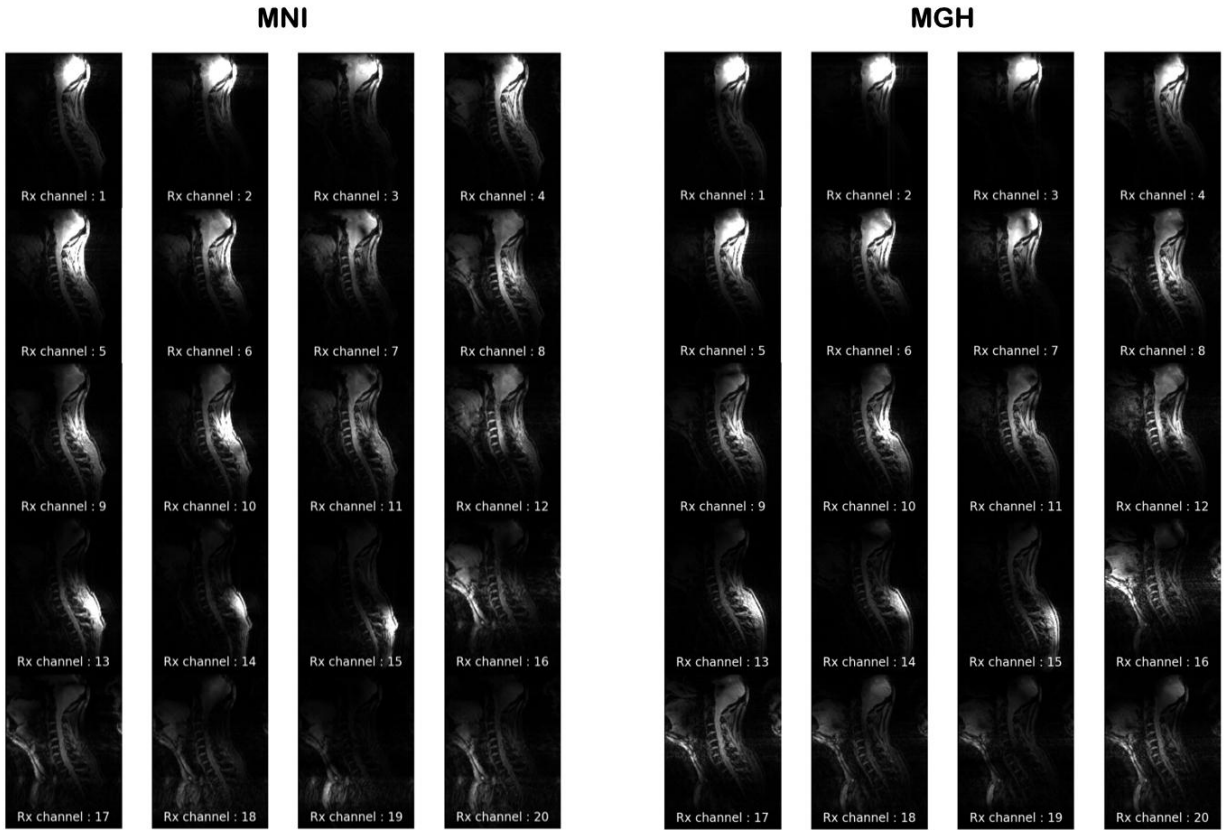


Figure S5: Individual channel GRE in-vivo sagittal images for MNI and MGH (Subject 2).

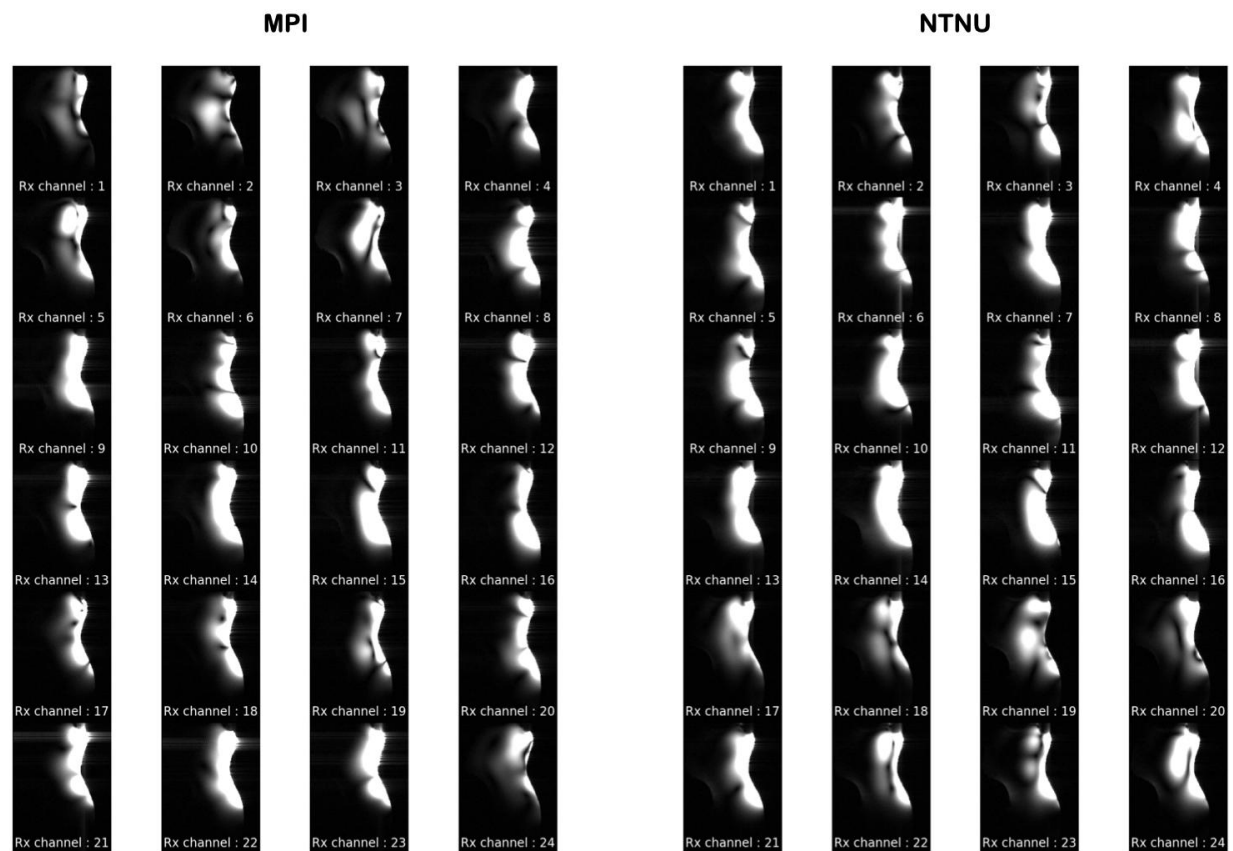


Figure S6: Individual channel GRE phantom sagittal images for MPI and NTNU (Subject 2).

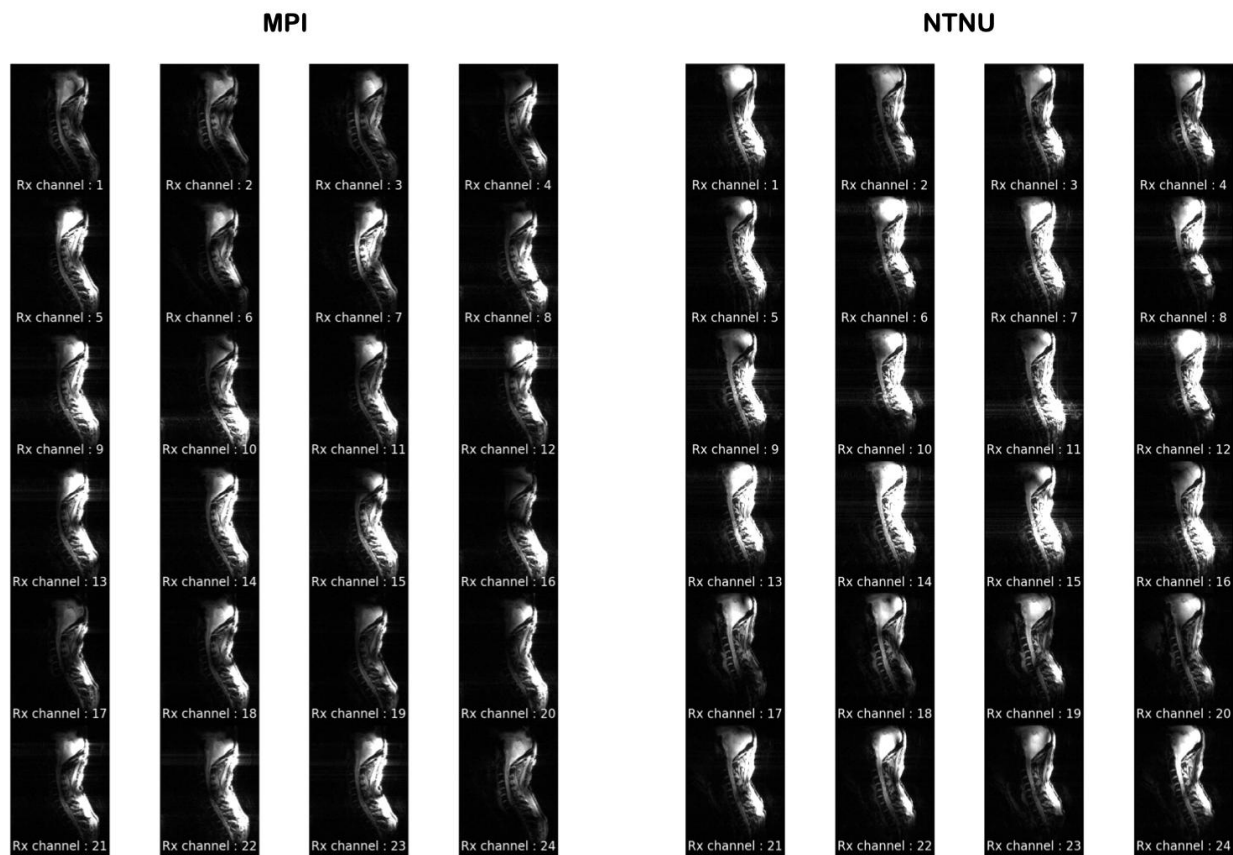


Figure S7: Individual channel GRE in-vivo sagittal images for MPI and NTNU (Subject 2).

MSSM

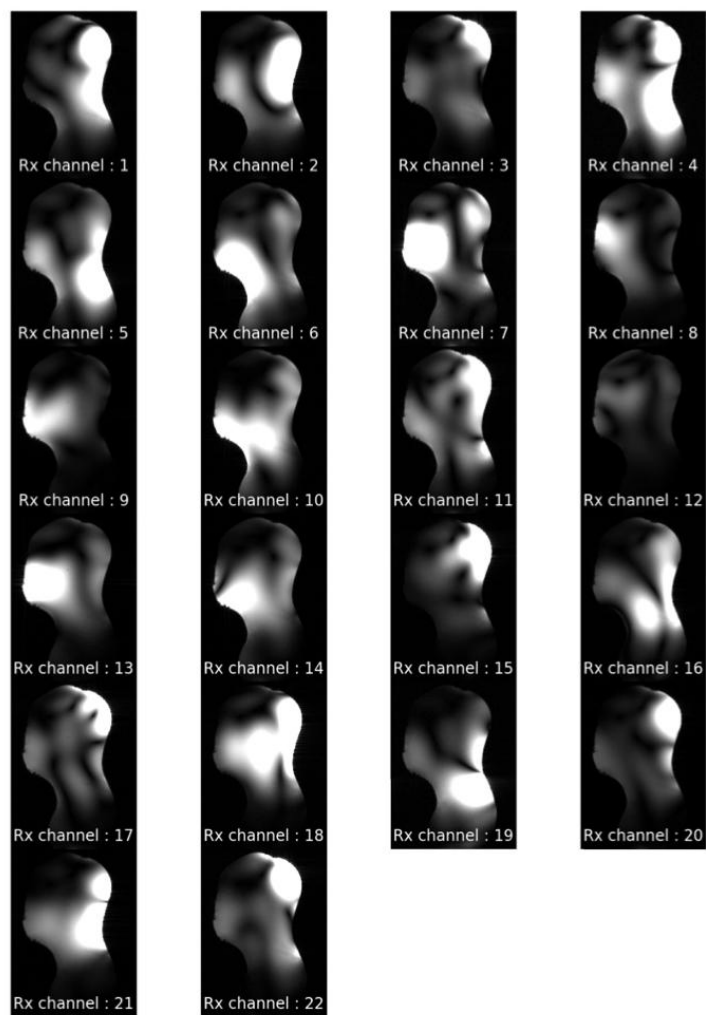


Figure S8: Individual channel GRE phantom sagittal images for MSSM (Subject 2).