



# Strategically Acquired Gradient Echo (STAGE) for rapid 3D imaging of the human brain

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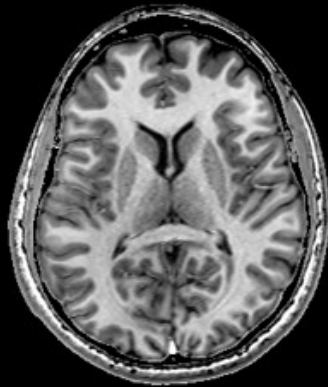
# Imaging Parameters

- The following table shows the imaging parameters of this dataset.
- Please note that you only used a 16 channel coil and you used too high a bandwidth of 350Hz/pixel not 210 Hz/pixel and both of these will cause a loss of SNR.
- However despite that you still have excellent images.

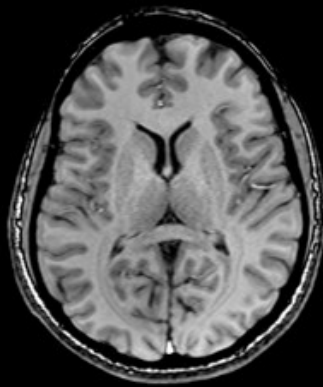
Prot.	TR (ms)	TE (ms)	FA (deg)	BW (Hz/px)	Acq. Resolution (mm <sup>3</sup> )	GRAPPA AF	Slices	TA (m:s)
PDW	25	7.5(RP)/17.5(RP)	6	345/345	0.67x1.34x2.0	2	64	2:29
T1W	25	8.75(RP)/18.75(RP)	24	345/345	0.67x1.34x2.0	2	64	2:29
MRAV	20	2.7(RP)/12.5(RP)/12.5(DP)	12	560/405/405	0.67x0.89x2.0	2	64	5:42

RP = rephased, DP = dephased

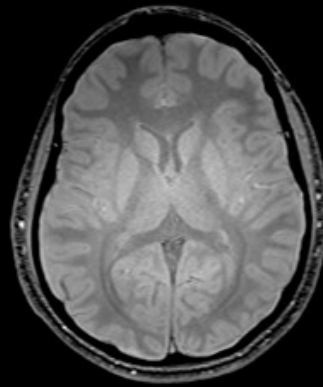
# STAGE A: Siemens results for 5 min brain scan



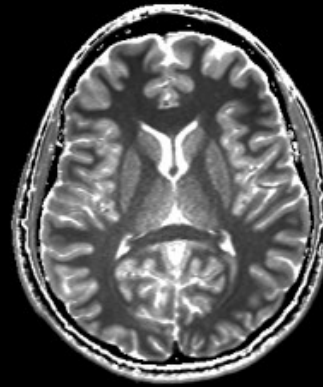
T1WE



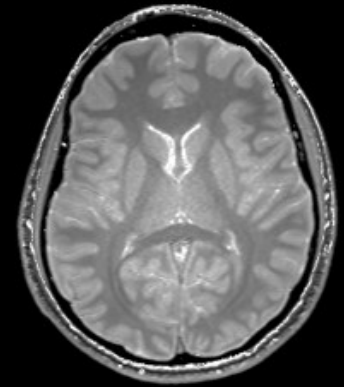
T1W



PDW



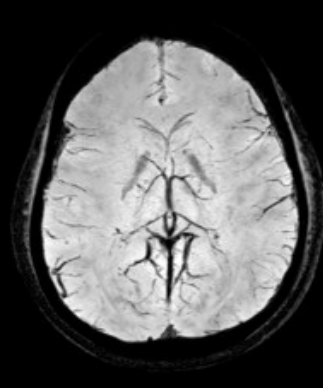
T1 MAP



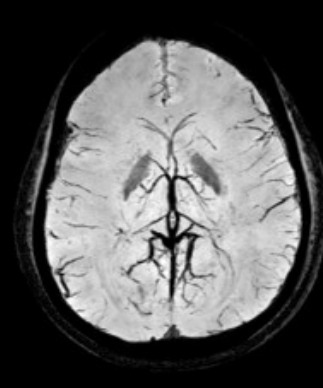
PD MAP



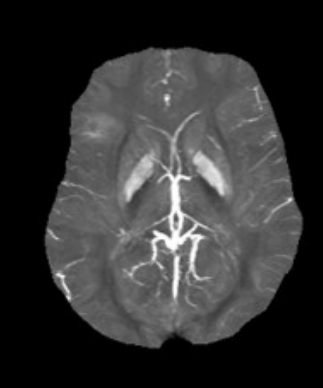
k MAP



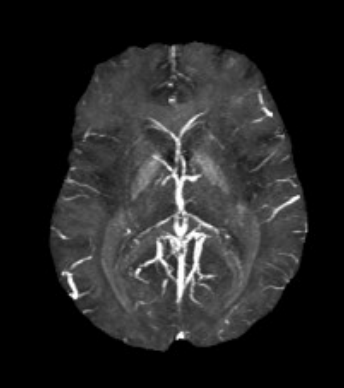
SWI



tSWI

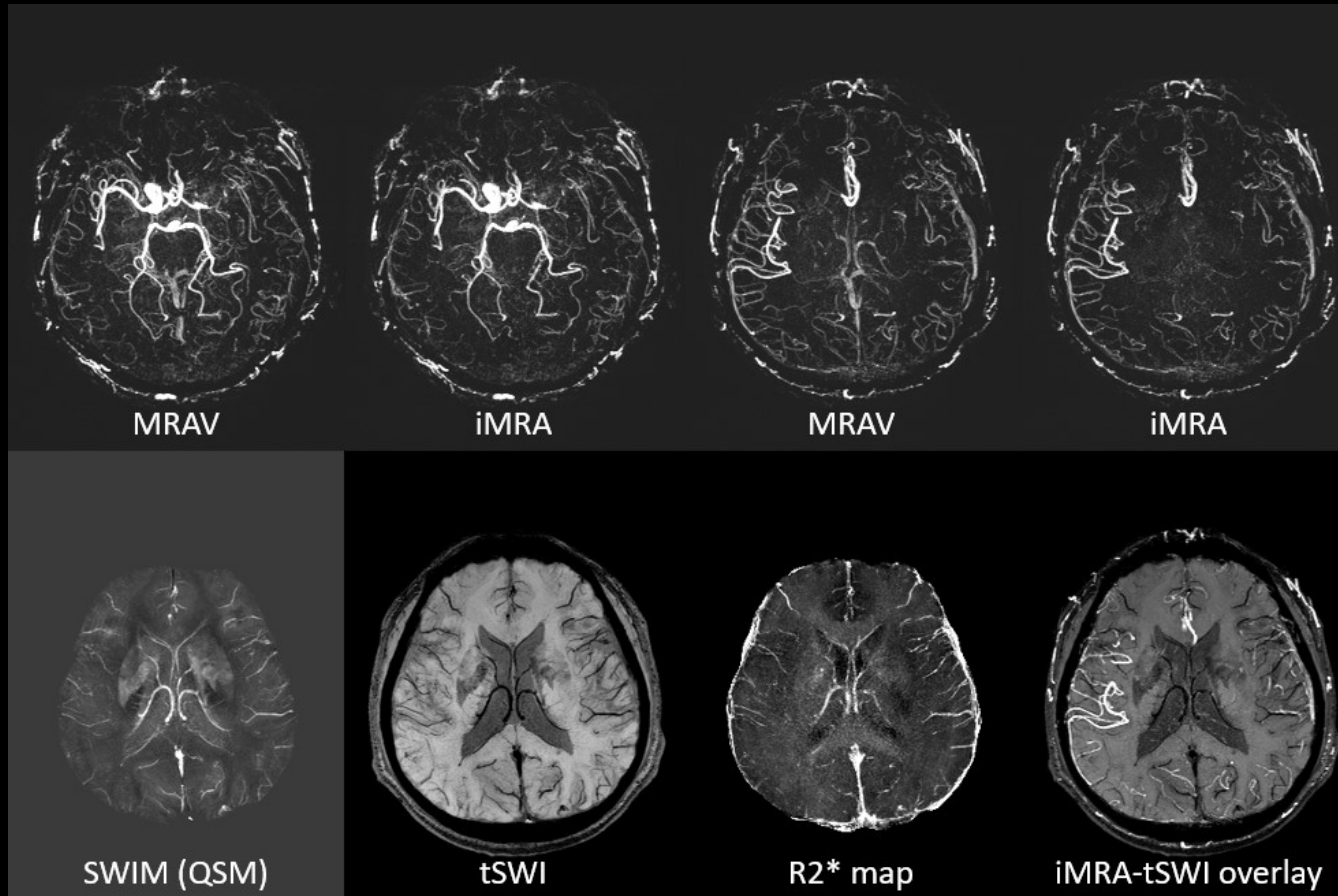


SWIM (QSM)



R2\* MAP

# Siemens Results for STAGE B: MRAV



With further processing both arteries and veins can be extracted to create either an MRA or an MRV. Please note that with a contrast agent these results are even more impressive. These MIPs are over 16 slices each 2mm thick (so 3.2 cm effective thickness).