\\USER\AMRIT\Liyong\20150821\localizer

TA: 0:13 PAT: Off Voxel size: 1.1×1.0×7.0 mm Rel. SNR: 1.00 SIEMENS: gre				
Droportion		Phase resolution	90 %	
Prio Page	Off	Phase partial Fourier	Off	
Prio Recon Before measurement	Oli	Interpolation	On	
After measurement		PAT mode	None	
Load to viewer	On	Matrix Coil Mode	Auto (CP)	
Inline movie	Off			
Auto store images	On	Image Filter	Off	
Load to stamp segments	Off	Distortion Corr.	Off	
Load images to graphic	Off	Unfiltered images	Off	
segments		Prescan Normalize Normalize	On Off	
Auto open inline display	Off	B1 filter	Off	
Start measurement without	Off	Raw filter	Off	
further preparation	0"	Elliptical filter	On	
Wait for user to start	Off	Mode	Inplane	
Start measurements	single	O a a manatura	•	
Routine		Geometry	Commential	
Slice group 1		- Multi-slice mode	Sequential Interleaved	
Slices	1	Series	mileneaveu	
Dist. factor	20 %	Saturation mode	Standard	
Position	Isocenter	Special sat.	None	
Orientation	Sagittal			
Phase enc. dir.	A >> P	Tim CT mode	Off	
Rotation	0.00 deg	System		
Slice group 2 Slices	1	Body	Off	
Dist. factor	20 %	HEP	On	
Position	Isocenter	HEA	On	
Orientation	Transversal	Destriction of the	DEE	
Phase enc. dir.	A >> P	Positioning mode	REF	
Rotation	0.00 deg	Table position Table position	H 0 mm	
Slice group 3	3	MSMA	S - C - T	
Slices	1	Sagittal	R >> L	
Dist. factor	20 %	Coronal	A >> P	
Position	Isocenter	Transversal	F >> H	
Orientation	Coronal	Save uncombined	Off	
Phase enc. dir.	R >> L	Coil Combine Mode	Adaptive Combine	
Rotation	0.00 deg	AutoAlign		
Phase oversampling	0 %	Auto Coil Select	Default	
FoV read	250 mm	Shim mode	Tune up	
FoV phase Slice thickness	100.0 % 7.0 mm	Adjust with body coil	Off	
TR	8.6 ms	Confirm freq. adjustment	Off	
TE	4.00 ms	Assume Silicone	Off	
Averages	2	? Ref. amplitude 1H	0.000 V	
Concatenations	3	Adjustment Tolerance	Auto	
Filter	Prescan Normalize, Elliptical	Adjust volume		
	filter	Position	Isocenter	
Coil elements	HEA;HEP	Orientation	Transversal	
Contrast		Rotation	0.00 deg	
TD	0 ms	R >> L	350 mm	
MTC	Off	A >> P	263 mm	
Magn. preparation	None	F >> H	350 mm	
Flip angle	20 deg	Physio		
Fat suppr.	None	1st Signal/Mode	None	
Water suppr.	None	Segments	1	
	Short term	Dark blood	Off	
Averaging mode Reconstruction	Magnitude			
Measurements	1	Resp. control	Off	
Multiple series	Each measurement	Inline		
1		Subtract	Off	
Resolution	050	Liver registration	Off	
Base resolution	256	Std-Dev-Sag	Off	
		-		

Std-Dev-Cor	Off
Std-Dev-Tra	Off
Std-Dev-Time	Off
MIP-Sag	Off
MIP-Cor	Off
MIP-Tra	Off
MIP-Time	Off
Save original images	On
Wash - In	Off
Wash - Out	Off
TTP	Off
PEI	Off
MIP - time	Off

Sequence

Introduction	On
Dimension	2D
Phase stabilisation	Off
Asymmetric echo	Allowed
Contrasts	1
Bandwidth	320 Hz/Px
Flow comp.	No
Allowed delay	0 s
RF pulse type	Normal
Gradient mode	Normal
Excitation	Slice-sel.
RF spoiling	On
. •	

\\USER\AMRIT\Liyong\20150821\t2_haste_sag_p2

TA: 0:13 P.	AT: 2 Voxel size: 1.0×1.0×	2.0 mm Rel. SNR: 1.00 S	IEMENS: haste
Properties		Width	4
Prio Recon	Off	Unfiltered images	Off
Before measurement	5 11	B1 filter	Off
After measurement		Raw filter	Off
Load to viewer	On	Elliptical filter	On
Inline movie	Off	Mode	Inplane
Auto store images	On	Geometry	
Load to stamp segments	Off	Multi-slice mode	Single shot
Load images to graphic	Off	Series	Interleaved
segments	Oli		
Auto open inline display	Off	Special sat.	None
Start measurement without	On		
	OII	Tim CT mode	Off
further preparation Wait for user to start	Off		
		System	
Start measurements	single	Body	Off
Routine		HEP	On
Slice group 1		— HEA	On
Slices	30	Positioning mode	FIX
Dist. factor	0 %	Table position	Н
Position	R0.9 A16.5 H52.3	Table position	0 mm
Orientation	Sagittal	MSMA	S - C - T
Phase enc. dir.	A >> P	Sagittal	R >> L
Rotation	0.00 deg	Coronal	A >> P
Phase oversampling	0 %		
FoV read	192 mm	Transversal	F >> H
FoV phase	100.0 %	Save uncombined	Off
Slice thickness	2.0 mm	Coil Combine Mode	Adaptive Combine
TR	395 ms	AutoAlign	
TE	76 ms	Auto Coil Select	Default
	76 ms 1	Shim mode	Tune up
Averages	1	Adjust with body coil	Off
Concatenations	Normaliza Elliptical filtar	Confirm freq. adjustment	Off
Filter	Normalize, Elliptical filter	Assume Silicone	Off
Coil elements	HEA;HEP	? Ref. amplitude 1H	0.000 V
Contrast		Adjustment Tolerance	Auto
MTC	Off	Adjust volume	Auto
Magn. preparation	None	Position	Isocenter
Flip angle	110 deg	Orientation	Transversal
Fat suppr.	None	Rotation	0.00 deg
Water suppr.	None	R >> L	350 mm
Restore magn.	Off	A >> P	263 mm
		F>> H	350 mm
Averaging mode	Long term	F >> F	300 IIIIII
Reconstruction	Magnitude	Physio	
Measurements	1	1st Signal/Mode	None
Multiple series	Each measurement	Dark blood	Off
Resolution			
Base resolution	192	Resp. control	Off
Phase resolution	100 %	Inline	
Phase partial Fourier	5/8	Subtract	Off
Interpolation	Off	Std-Dev-Sag	Off
DAT mode	CDADDA	Std-Dev-Cor	Off
PAT mode	GRAPPA	Std-Dev-Tra	Off
Accel. factor PE	2	Std-Dev-Time	Off
Ref. lines PE	24	MIP-Sag	Off
Matrix Coil Mode	Auto (Triple)	MIP-Cor	Off
Reference scan mode	Integrated	MIP-Tra	Off
Image Filter	Off	MIP-Tra MIP-Time	Off
Distortion Corr.	Off	_	
Prescan Normalize	Off	Save original images	On
		Sequence	
	_		On
Normalize Intensity Cut off	On Medium 20	Sequence Introduction Dimension	On 2D

Contrasts	1
Bandwidth	592 Hz/Px
Flow comp.	No
Allowed delay	30 s
Echo spacing	5.82 ms
 Turbo factor	192
RF pulse type	Fast
Gradient mode	Fast

 $\verb|\USER\AMRIT\Liyong\20150821\gre_david|$

TA: 0:45 PAT: 2 Voxel size: 0.9×0.8×4.0 mm Rel. SNR: 1.00 SIEMENS: gre			
Properties		B1 filter	Off
Prio Recon	Off	- Raw filter	Off
Before measurement	Oii	Elliptical filter	On
		Mode	Inplane
After measurement Load to viewer	On	Geometry	
	Off	Multi-slice mode	Cognostial
Inline movie			Sequential
Auto store images	On O#	Series	Interleaved
Load to stamp segments	Off	Saturation mode	Standard
Load images to graphic	Off	Special sat.	None
segments	0"		
Auto open inline display	Off	Tim CT mode	Off
Start measurement without	On		
further preparation	0"	System	
Wait for user to start	Off	Body	Off
Start measurements	single	HEP	On
Routine		HEA	On
Slice group 1		Docitioning made	DEE
Slices	40	Positioning mode	REF
Dist. factor	0 %	Table position	Н
Position	L1.8 A14.8 H44.8	Table position	0 mm
Orientation		MSMA	S-C-T
	Transversal	Sagittal	R >> L
Phase enc. dir.	A >> P	Coronal	A >> P
Rotation	0.00 deg	Transversal	F >> H
Phase oversampling	0 %	Save uncombined	Off
FoV read	200 mm	Coil Combine Mode	Adaptive Combine
FoV phase	100.0 %	AutoAlign	
Slice thickness	4.0 mm	Auto Coil Select	Default
TR	8.6 ms	China manda	T
TE	4.00 ms	Shim mode	Tune up
Averages	1	Adjust with body coil	Off
Concatenations	40	Confirm freq. adjustment	Off
Filter	Prescan Normalize, Elliptical	Assume Silicone	Off
	filter	? Ref. amplitude 1H	0.000 V
Coil elements	HEA;HEP	Adjustment Tolerance	Auto
Combinat		Adjust volume	
Contrast	0	_ Position	Isocenter
TD	0 ms	Orientation	Transversal
MTC	Off	Rotation	0.00 deg
Magn. preparation	None	R >> L	350 mm
Flip angle	20 deg	A >> P	263 mm
Fat suppr.	None	F >> H	350 mm
Water suppr.	None	Physic	
Averaging mode	Short term	Physio	None
Reconstruction	Magnitude	1st Signal/Mode	None 1
Measurements	1	Segments	1
Multiple series	Each measurement	Dark blood	Off
Multiple Series	Lacifileasarement		
Resolution		Resp. control	Off
Base resolution	256	- Inline	
Phase resolution	90 %	Subtract	Off
Phase partial Fourier	Off	Liver registration	Off
Interpolation	On	Std-Dev-Sag	Off
	OD 4 DD 4	Std-Dev-Sag Std-Dev-Cor	Off
PAT mode	GRAPPA	Std-Dev-Tra	Off
Accel. factor PE	2	Std-Dev-Tra Std-Dev-Time	Off
Ref. lines PE	24		_
Matrix Coil Mode	Auto (Triple)	MIP-Sag	Off
Reference scan mode	Integrated	MIP-Cor	Off
Image Filter	Off	MIP-Tra	Off
		MIP-Time	Off
Distortion Corr.	Off	Save original images	On
Unfiltered images	Off	Wash - In	Off
Prescan Normalize	On O#	Wash - Out	Off
Normalize	Off	Wash Out	OII

TTP PEI MIP - time	Off Off Off
Sequence	
Introduction	On
Dimension	2D
Phase stabilisation	Off
Asymmetric echo	Allowed
Contrasts	1
Bandwidth	320 Hz/Px
Flow comp.	No
Allowed delay	0 s
RF pulse type	Normal
Gradient mode	Normal
Excitation	Slice-sel.
RF spoiling	On

TA: 2:24	Voxel size: 1.4×1.4×4.0 mm	Rel. SNR: 1.00 USER: e	p_seg_fid_venc
Properties		Body	Off
Prio Recon	Off	- HEP	On
Before measurement	OII	HEA	On
After measurement		Positioning mode	FIX
Load to viewer	On	Table position	H
Inline movie	Off	Table position	0 mm
Auto store images	On	MSMA	S - C - T
Load to stamp segments	Off	Sagittal	R >> L
Load images to graphic	Off	Coronal	A >> P
segments	Oil	Transversal	F >> H
Auto open inline display	Off	Save uncombined	Off
Start measurement without	On	Coil Combine Mode	Sum of Squares
	Oli	AutoAlign	
further preparation Wait for user to start	Off	Auto Coil Select	Default
		Auto Con Select	Delault
Start measurements	single	Shim mode	Standard
loutine		Adjust with body coil	Off
Slice group 1		Confirm freq. adjustment	Off
Slices	1	Assume Silicone	Off
Dist. factor	50 %	? Ref. amplitude 1H	0.000 V
Position	L5.4 A15.4 H30.0	Adjustment Tolerance	Auto
Orientation	Transversal	Adjust volume	
Phase enc. dir.	A >> P	Position	L5.4 A15.4 H30.0
Rotation	0.00 deg	Orientation	Transversal
Phase oversampling	0 %	Rotation	0.00 deg
FoV read	180 mm	R >> L	180 mm
FoV phase	100.0 %	A >> P	180 mm
Slice thickness	4.0 mm	F >> H	4 mm
TR	36 ms	I	4 111111
TE	18 ms	Physio	
Averages	1	1st Signal/Mode	None
Concatenations	1	Segments	4
Filter	None	Resp. control	Off
Coil elements	HEA;HEP	Resp. control	Oli
Con cicinents	11273,1121	Sequence	
Contrast		Introduction	Off
MTC	Off	Dimension	2D
Flip angle	15 deg	Bandwidth	1502 Hz/Px
Fat suppr.	None	Free echo spacing	Off
Averaging mode	Long torm	Echo spacing	0.87 ms
Averaging mode Reconstruction	Long term Magnitude	EDI for the second	
Measurements	800	EPI factor	33
		RF pulse type	Normal
Pause after meas.	0.0 s	Gradient mode	Fast
Multiple series	Off	RF spoiling	On
Resolution		Flow Compensation	Off
Base resolution	128	Centric Reorder	On
Phase resolution	100 %	Pat Ref Scan	On
Phase partial Fourier	Off	VENC value	400
Interpolation	Off	Undersampled	On
Matrix Coil Mode		- Chacisampica	On
	Auto (CP)		
Distortion Corr.	Off		
Prescan Normalize	Off		
Raw filter	Off		
Elliptical filter	Off		
Hamming	Off		
Geometry		_	
Multi-slice mode	Sequential	-	
Series	Ascending		
Special sat.	None		

System

TA: 1:54

USER: fl_fq_mb

Properties		Special sat.	None
Prio Recon	Off	System	
Before measurement	Oll	Body	Off
After measurement		HEP	On
Load to viewer	On	HEA	On
Inline movie	Off		OII
	On	Positioning mode	FIX
Auto store images	Off	Table position	Н
Load to stamp segments		Table position	0 mm
Load images to graphic	Off	MSMA	S - C - T
segments	0"	Sagittal	R >> L
Auto open inline display	Off	Coronal	A >> P
Start measurement without	On	Transversal	F >> H
further preparation	0.00	Coil Combine Mode	Adaptive Combine
Wait for user to start	Off	AutoAlign	
Start measurements	single	Auto Coil Select	Default
Routine			
Slice group 1		—— Shim mode	Tune up
Slices	1	Adjust with body coil	Off
Dist. factor	700 %	Confirm freq. adjustment	Off
Position	L5.4 A15.4 H30.0	Assume Silicone	Off
Orientation	Transversal	? Ref. amplitude 1H	0.000 V
Phase enc. dir.	A >> P	Adjustment Tolerance	Auto
Rotation	0.00 deg	Adjust volume	
	0.00 deg 0 %	Position	Isocenter
Phase oversampling		Orientation	Transversal
FoV read	192 mm	Rotation	0.00 deg
FoV phase	100.0 %	R >> L	350 mm
Slice thickness	4.0 mm	A >> P	263 mm
TR	19.55 ms	F >> H	350 mm
TE	6.01 ms	ļ	000 111111
Averages	1	Physio	
Concatenations	1	1st Signal/Mode	Pulse/Trigger
Filter	None	Average cycle	No Signal ms
Coil elements	HEA;HEP	Captured cycle	-not set-
Contrast		Acquisition window	800 ms
Flip angle	15 deg	Trigger pulse	1
·····		Trigger delay	0 ms
Averaging mode	Short term	Segments	1
Reconstruction	Magnitude	Phases	40
Measurements	1	Angio	
Multiple series	Each measurement	Flow mode	Single dir.
Resolution			Sirigle dir.
Resolution		Encodingo	1
Door recolution	256	Encodings	1 20 cm/s
Base resolution	256	Velocity enc.	1 20 cm/s
Phase resolution	100 %	Velocity enc. Direction	Through plane
Phase resolution Phase partial Fourier	100 % Off	Velocity enc. Direction Rephased images	Through plane On
Phase resolution	100 %	Velocity enc. Direction Rephased images Magnitude images	Through plane On On
Phase resolution Phase partial Fourier	100 % Off	Velocity enc. Direction Rephased images	Through plane On
Phase resolution Phase partial Fourier Interpolation	100 % Off Off	Velocity enc. Direction Rephased images Magnitude images Phase images	Through plane On On
Phase resolution Phase partial Fourier Interpolation PAT mode Accel. factor PE	100 % Off Off GRAPPA 2	Velocity enc. Direction Rephased images Magnitude images Phase images Subtract	Through plane On On On On
Phase resolution Phase partial Fourier Interpolation PAT mode Accel. factor PE Ref. lines PE	100 % Off Off GRAPPA 2 24	Velocity enc. Direction Rephased images Magnitude images Phase images Subtract Std-Dev-Sag	Through plane On On On On On Off
Phase resolution Phase partial Fourier Interpolation PAT mode Accel. factor PE Ref. lines PE Matrix Coil Mode	100 % Off Off GRAPPA 2 24 Auto (Triple)	Velocity enc. Direction Rephased images Magnitude images Phase images Subtract Std-Dev-Sag Std-Dev-Cor	Through plane On On On On Off Off Off
Phase resolution Phase partial Fourier Interpolation PAT mode Accel. factor PE Ref. lines PE Matrix Coil Mode Reference scan mode	100 % Off Off GRAPPA 2 24 Auto (Triple) Integrated	Velocity enc. Direction Rephased images Magnitude images Phase images Subtract Std-Dev-Sag Std-Dev-Tra	Through plane On On On Off Off Off Off
Phase resolution Phase partial Fourier Interpolation PAT mode Accel. factor PE Ref. lines PE Matrix Coil Mode Reference scan mode Image Filter	100 % Off Off GRAPPA 2 24 Auto (Triple) Integrated Off	Velocity enc. Direction Rephased images Magnitude images Phase images Subtract Std-Dev-Sag Std-Dev-Cor Std-Dev-Tra Std-Dev-Time	Through plane On On On Off Off Off Off Off Off Off
Phase resolution Phase partial Fourier Interpolation PAT mode Accel. factor PE Ref. lines PE Matrix Coil Mode Reference scan mode	100 % Off Off GRAPPA 2 24 Auto (Triple) Integrated	Velocity enc. Direction Rephased images Magnitude images Phase images Subtract Std-Dev-Sag Std-Dev-Cor Std-Dev-Tra Std-Dev-Time MIP-Sag	Through plane On On On Off Off Off Off Off Off Off Of
Phase resolution Phase partial Fourier Interpolation PAT mode Accel. factor PE Ref. lines PE Matrix Coil Mode Reference scan mode Image Filter	100 % Off Off GRAPPA 2 24 Auto (Triple) Integrated Off	Velocity enc. Direction Rephased images Magnitude images Phase images Subtract Std-Dev-Sag Std-Dev-Cor Std-Dev-Tra Std-Dev-Time MIP-Sag MIP-Cor	Through plane On On On Off Off Off Off Off Off Off Of
Phase resolution Phase partial Fourier Interpolation PAT mode Accel. factor PE Ref. lines PE Matrix Coil Mode Reference scan mode Image Filter Distortion Corr.	100 % Off Off GRAPPA 2 24 Auto (Triple) Integrated Off Off	Velocity enc. Direction Rephased images Magnitude images Phase images Subtract Std-Dev-Sag Std-Dev-Cor Std-Dev-Tra Std-Dev-Time MIP-Sag MIP-Cor MIP-Tra	Through plane On On On Off Off Off Off Off Off Off Of
Phase resolution Phase partial Fourier Interpolation PAT mode Accel. factor PE Ref. lines PE Matrix Coil Mode Reference scan mode Image Filter Distortion Corr. Prescan Normalize	100 % Off Off GRAPPA 2 24 Auto (Triple) Integrated Off Off Off Off	Velocity enc. Direction Rephased images Magnitude images Phase images Subtract Std-Dev-Sag Std-Dev-Cor Std-Dev-Tra Std-Dev-Time MIP-Sag MIP-Cor MIP-Tra MIP-Tra	Through plane On On On Off Off Off Off Off Off Off Of
Phase resolution Phase partial Fourier Interpolation PAT mode Accel. factor PE Ref. lines PE Matrix Coil Mode Reference scan mode Image Filter Distortion Corr. Prescan Normalize Normalize	100 % Off Off GRAPPA 2 24 Auto (Triple) Integrated Off Off Off Off Off Off	Velocity enc. Direction Rephased images Magnitude images Phase images Subtract Std-Dev-Sag Std-Dev-Cor Std-Dev-Tra Std-Dev-Time MIP-Sag MIP-Cor MIP-Tra	Through plane On On On Off Off Off Off Off Off Off Of
Phase resolution Phase partial Fourier Interpolation PAT mode Accel. factor PE Ref. lines PE Matrix Coil Mode Reference scan mode Image Filter Distortion Corr. Prescan Normalize Normalize B1 filter Raw filter	100 % Off Off GRAPPA 2 24 Auto (Triple) Integrated Off Off Off Off Off Off Off Off	Velocity enc. Direction Rephased images Magnitude images Phase images Subtract Std-Dev-Sag Std-Dev-Cor Std-Dev-Tra Std-Dev-Time MIP-Sag MIP-Cor MIP-Tra MIP-Time Save original images	Through plane On On On Off Off Off Off Off Off Off Of
Phase resolution Phase partial Fourier Interpolation PAT mode Accel. factor PE Ref. lines PE Matrix Coil Mode Reference scan mode Image Filter Distortion Corr. Prescan Normalize Normalize B1 filter Raw filter Elliptical filter	100 % Off Off GRAPPA 2 24 Auto (Triple) Integrated Off Off Off Off Off Off	Velocity enc. Direction Rephased images Magnitude images Phase images Subtract Std-Dev-Sag Std-Dev-Cor Std-Dev-Tra Std-Dev-Time MIP-Sag MIP-Cor MIP-Tra MIP-Tra MIP-Time Save original images Sequence	Through plane On On On Off Off Off Off Off Off Off Of
Phase resolution Phase partial Fourier Interpolation PAT mode Accel. factor PE Ref. lines PE Matrix Coil Mode Reference scan mode Image Filter Distortion Corr. Prescan Normalize Normalize B1 filter Raw filter Elliptical filter Geometry	100 % Off Off Off GRAPPA 2 24 Auto (Triple) Integrated Off Off Off Off Off Off Off Off Off O	Velocity enc. Direction Rephased images Magnitude images Phase images Subtract Std-Dev-Sag Std-Dev-Cor Std-Dev-Tra Std-Dev-Time MIP-Sag MIP-Cor MIP-Tra MIP-Tra MIP-Time Save original images Sequence Introduction	Through plane On On On Off Off Off Off Off Off Off Of
Phase resolution Phase partial Fourier Interpolation PAT mode Accel. factor PE Ref. lines PE Matrix Coil Mode Reference scan mode Image Filter Distortion Corr. Prescan Normalize Normalize B1 filter Raw filter Elliptical filter	100 % Off Off GRAPPA 2 24 Auto (Triple) Integrated Off Off Off Off Off Off Off Off	Velocity enc. Direction Rephased images Magnitude images Phase images Subtract Std-Dev-Sag Std-Dev-Cor Std-Dev-Tra Std-Dev-Time MIP-Sag MIP-Cor MIP-Tra MIP-Tra MIP-Time Save original images Sequence	Through plane On On On Off Off Off Off Off Off Off Of

Flow comp.	No	
RF pulse type Gradient mode RF spoiling	Normal Fast On	
MB Number FOV Shift	1	
Distance22	32	

\\USER\AMRIT\Liyong\20150821\ep2d_venc8_fast_basal_venc8

USER: ep2d_venc_ms_sbmb_SAT

Voxel size: 1.4×1.4×4.0 mm Rel. SNR: 1.00

PAT: 2

TA: 1:19:55

			. – – – –
Properties		Sat. region 1	
Prio Recon	Off	Thickness	50 mm
Before measurement		Position	R1.1 A81.7 F99.5
After measurement		Orientation	C > T-5.4 > S0.9
Load to viewer	On	Sat. region 2	
Inline movie	Off	Thickness	50 mm
Auto store images	On	Position	R0.5 P72.7 F78.8
Load to stamp segments	Off	Orientation	C > T-5.4 > S0.9
	Off		None
Load images to graphic	Oli	Special sat.	None
segments	0"	System	
Auto open inline display	Off	Body	Off
Start measurement without	On	HEP	On
further preparation		HEA	On
Wait for user to start	Off	TIEA	
Start measurements	single	Positioning mode	FIX
	-	Table position	Н
Routine		Table position	0 mm
Slice group 1		MSMA	S - C - T
Slices	1		R >> L
Dist. factor	1000 %	Sagittal	A >> P
Position	L5.4 A15.4 H30.0	Coronal	
Orientation	Transversal	Transversal	F >> H
Phase enc. dir.	A >> P	Coil Combine Mode	Sum of Squares
Rotation	0.00 deg	AutoAlign	
Phase oversampling	0.00 deg	Auto Coil Select	Default
FoV read	180 mm	Chies es a de	Otomoloud
		Shim mode	Standard
FoV phase	100.0 %	Adjust with body coil	Off
Slice thickness	4.0 mm	Confirm freq. adjustment	Off
TR	5920 ms	Assume Silicone	Off
TE	34.0 ms	? Ref. amplitude 1H	0.000 V
Averages	1	Adjustment Tolerance	Auto
Concatenations	1	Adjust volume	
Filter	None	Position	L5.4 A15.4 H30.0
Coil elements	HEA;HEP	Orientation	Transversal
I	•	Rotation	0.00 deg
Contrast		—— R >> L	180 mm
MTC	Off	A >> P	180 mm
Flip angle	25 deg		
Fat suppr.	Fat sat.	F >> H	4 mm
		···· Physio	
Averaging mode	Long term	1st Signal/Mode	None
Reconstruction	Magnitude	Tot Oighaw Modo	110110
Measurements	820	Angio	
Delay in TR	0 ms	Flow mode	Single dir.
Multiple series	Off	Encodings	1
Decelution		Velocity enc.	16 cm/s
Resolution	100	—— Direction	R >> L
Base resolution	128	Magnitude sum	Off
Phase resolution	100 %	Wagintado bani	011
Phase partial Fourier	6/8	Sequence	
Interpolation	Off	Introduction	Off
		Bandwidth	1628 Hz/Px
PAT mode	GRAPPA	Free echo spacing	Off
Accel. factor PE	2	Echo spacing	0.96 ms
Ref. lines PE	24	Lono spacing	0.90 1118
Matrix Coil Mode	Auto (Triple)	EPI factor	128
Reference scan mode	Separate	RF pulse type	Normal
		Gradient mode	Fast
Distortion Corr	Off	RF spoiling	On
Distortion Corr.		i ixi əddiiiiu	OII
Prescan Normalize	Off		
		RF90 duration	5120
Prescan Normalize Raw filter	Off		5120 1
Prescan Normalize Raw filter Elliptical filter	Off Off Off	RF90 duration MB Number	1
Prescan Normalize Raw filter Elliptical filter Hamming	Off Off	RF90 duration MB Number DummyScan Number	
Prescan Normalize Raw filter Elliptical filter Hamming Geometry	Off Off Off Off	RF90 duration MB Number DummyScan Number FOV Shift Number	1
Prescan Normalize Raw filter Elliptical filter Hamming	Off Off Off	RF90 duration MB Number DummyScan Number	1

SER Number	1
Venc Repetition	800
Spoil factor	5
Skew Direction	1
DualBand Sat	0
FOV Dir	0
Venc Type(0off,1+-,20+,3on,4	1
00++)	

TA: 2:24	Voxel size: 1.4×1.4×4.0 mm	Rel. SNR: 1.00 USER: e	o_seg_fid_venc
Properties		Body	Off
Prio Recon	Off	_ HEP	On
Before measurement	Oli	HEA	On
After measurement		Positioning mode	FIX
Load to viewer	On	Table position	H
Inline movie	Off	Table position	0 mm
Auto store images	On	MSMA	S - C - T
Load to stamp segments	Off	Sagittal	R >> L
Load images to graphic	Off	Coronal	A >> P
segments	.	Transversal	F >> H
Auto open inline display	Off	Save uncombined	Off
Start measurement without	On	Coil Combine Mode	Sum of Squares
further preparation	.	AutoAlign	
Wait for user to start	Off	Auto Coil Select	Default
Start measurements	single		
	519.0	Shim mode	Standard
Coutine		Adjust with body coil	Off
Slice group 1		Confirm freq. adjustment	Off
Slices	1	Assume Silicone	Off
Dist. factor	50 %	? Ref. amplitude 1H	0.000 V
Position	L5.4 A15.4 H30.0	Adjustment Tolerance	Auto
Orientation	Transversal	Adjust volume	
Phase enc. dir.	A >> P	Position	L5.4 A15.4 H30.0
Rotation	0.00 deg	Orientation	Transversal
Phase oversampling	0 %	Rotation	0.00 deg
FoV read	180 mm	R >> L	180 mm
FoV phase	100.0 %	A >> P	180 mm
Slice thickness	4.0 mm	F >> H	4 mm
TR	36 ms	Physio	
TE	18 ms	1st Signal/Mode	None
Averages	1	Segments	4
Concatenations	1		
Filter	None	Resp. control	Off
Coil elements	HEA;HEP	Sequence	
Contrast		Introduction	Off
MTC	Off	Dimension	2D
Flip angle	15 deg	Bandwidth	1502 Hz/Px
Fat suppr.	None	Free echo spacing	Off
		Echo spacing	0.87 ms
Averaging mode	Long term		
Reconstruction	Magnitude	EPI factor	33
Measurements	800	RF pulse type	Normal
Pause after meas.	0.0 s	Gradient mode	Fast
Multiple series	Off	RF spoiling	On
Resolution		Flow Compensation	Off
Base resolution	128	Centric Reorder	On
Phase resolution	100 %	Pat Ref Scan	On
Phase partial Fourier	Off	VENC value	160
Interpolation	Off	Undersampled	On
Matrix Coil Mode	Auto (CP)	Ondersampled	OII
Distortion Corr.	Off		
Prescan Normalize	Off		
Raw filter	Off		
Elliptical filter	Off		
Hamming	Off		
Geometry			
Multi-slice mode	Sequential	_	
Series	Ascending		

System

\\USER\AMRIT\Liyong\20150821\fl_fq_mb1f1p2_venc8_res256 PAT: 2 Voxel size: 0.8×0.8×4.0 mm Rel. SNR: 1.00 USER:

TA: 1:54

USER: fl_fq_mb

Properties		Special sat.	None
Prio Recon	Off	System	
Before measurement		Body	Off
After measurement		HEP	On
Load to viewer	On	HEA	On
Inline movie	Off	Desitioning	FIV
Auto store images	On	Positioning mode	FIX
Load to stamp segments	Off	Table position	Н
Load images to graphic	Off	Table position	0 mm
segments		MSMA	S - C - T
Auto open inline display	Off	Sagittal	R >> L
Start measurement without	On	Coronal	A >> P
further preparation	.	Transversal	F >> H
Wait for user to start	Off	Coil Combine Mode	Adaptive Combine
Start measurements	single	AutoAlign	
	Sirigio	Auto Coil Select	Default
outine		—— Shim mode	Tune up
Slice group 1		Adjust with body coil	Off
Slices	1		Off
Dist. factor	700 %	Confirm freq. adjustment Assume Silicone	Off
Position	L5.4 A15.4 H30.0		
Orientation	Transversal	? Ref. amplitude 1H	0.000 V
Phase enc. dir.	A >> P	Adjustment Tolerance	Auto
Rotation	0.00 deg	Adjust volume	
Phase oversampling	0 %	Position	Isocenter
FoV read	192 mm	Orientation	Transversal
FoV phase	100.0 %	Rotation	0.00 deg
Slice thickness	4.0 mm	R >> L	350 mm
TR	23.60 ms	A >> P	263 mm
TE	8.02 ms	F >> H	350 mm
Averages	1	Physio	
Concatenations	1	1st Signal/Mode	Pulse/Trigger
Filter	None		
Coil elements	HEA;HEP	Average cycle	No Signal ms
Coll elements	пса,псе	Captured cycle	-not set-
ontrast		Acquisition window	800 ms
Flip angle	15 deg	Trigger pulse	1
		Trigger delay	0 ms
Averaging mode	Short term	Segments	1
Reconstruction	Magnitude	Phases	33
Measurements	1	Angio	
Multiple series	Each measurement	Flow mode	Single dir.
esolution		Encodings	1
Base resolution	256	Velocity enc.	8 cm/s
Phase resolution	100 %	Direction	Through plane
Phase partial Fourier	Off	Rephased images	On
Interpolation	Off		On
	OII	Magnitude images Phase images	On
PAT mode	GRAPPA	Friase illiages	OII
Accel. factor PE	2	Subtract	Off
Ref. lines PE	24	Std-Dev-Sag	Off
Matrix Coil Mode	Auto (Triple)	Std-Dev-Cor	Off
Reference scan mode	Integrated	Std-Dev-Tra	Off
		Std-Dev-Time	Off
Image Filter	Off	MIP-Sag	Off
Distortion Corr.	Off	MIP-Cor	Off
Prescan Normalize	Off	MIP-Tra	Off
Normalize	Off	MIP-Tra MIP-Time	Off
B1 filter	Off		On
Raw filter	Off	Save original images	Oli
Elliptical filter	Off	Sequence	
·		Introduction	On
eometry		Asymmetric echo	Off
Multi-slice mode	Sequential		
Series	Interleaved	Contrasts	1

Flow comp.	No	
RF pulse type Gradient mode RF spoiling	Normal Fast On	
MB Number FOV Shift	1	
Distance22	32	

 $\verb|\USER\AMRIT\>| Liyong \end{|} 20150821 \end{|} ep_seg_fid33_venc8_4th_ventrical$

TA: 2:24	Voxel size: 1.4×1.4×4.0 mm	Rel. SNR: 1.00 USER: e	p_seg_fid_venc
D .:		Body	Off
Properties		- HEP	On
Prio Recon	Off	HEA	On
Before measurement		Desiries and	FIV
After measurement	0-	Positioning mode	FIX
Load to viewer	On O#	Table position	H
Inline movie	Off	Table position	0 mm S - C - T
Auto store images	On Off	MSMA Societal	
Load to stamp segments	Off Off	Sagittal Coronal	R >> L A >> P
Load images to graphic	OII	Transversal	F >> H
segments	Off	Save uncombined	г>>п Off
Auto open inline display			
Start measurement without	On	Coil Combine Mode AutoAlign	Sum of Squares
further preparation Wait for user to start	Off	Auto Coil Select	Default
Start measurements		Auto Coil Select	Delault
Start measurements	single	Shim mode	Standard
Routine		Adjust with body coil	Off
Slice group 1		Confirm freq. adjustment	Off
Slices	1	Assume Silicone	Off
Dist. factor	50 %	? Ref. amplitude 1H	0.000 V
Position	L5.4 A9.8 H76.5	Adjustment Tolerance	Auto
Orientation	Transversal	Adjust volume	
Phase enc. dir.	A >> P	Position	L5.4 A9.8 H76.5
Rotation	0.00 deg	Orientation	Transversal
Phase oversampling	0 %	Rotation	0.00 deg
FoV read	180 mm	R >> L	180 mm
FoV phase	100.0 %	A >> P	180 mm
Slice thickness	4.0 mm	F >> H	4 mm
TR	36 ms	Dhysis	
TE	18 ms	Physio 1/Mada	None
Averages	1	1st Signal/Mode	None
Concatenations	1	Segments	4
Filter	None	Resp. control	Off
Coil elements	HEA;HEP	· ·	
Contrast		Sequence	0"
MTC	Off	Introduction	Off 2D
Flip angle	15 deg	Dimension Bondwidth	
Fat suppr.	None	Bandwidth	1502 Hz/Px
ι αι συμρι.		Free echo spacing	Off
Averaging mode	Long term	Echo spacing	0.87 ms
Reconstruction	Magnitude	EPI factor	33
Measurements	800	RF pulse type	Normal
Pause after meas.	0.0 s	Gradient mode	Fast
Multiple series	Off	RF spoiling	On
Resolution			
Base resolution	128	Flow Compensation	Off
Phase resolution	100 %	Centric Reorder	On
	Off	Pat Ref Scan	On 160
Phase partial Fourier Interpolation	Off	VENC value	160
	OII	Undersampled	On
Matrix Coil Mode	Auto (CP)		
Distortion Corr.	Off		
Prescan Normalize	Off		
Raw filter	Off		
Elliptical filter	Off		
Hamming	Off		
		_	
Multi-slice mode	Sequential	-	
<u>~</u>	Sequential Ascending	-	
	•	-	

System

\\USE	R\AMRIT\	Liyong\20150821\fl_fq_mb1t	f1p2_venc8_res2	56_4th_ventri
TA: 1:54	PAT: 2	Voxel size: 0.8×0.8×4.0 mm	Rel. SNR: 1.00	USER: fl_fq_mb

D		Special sat.	None
Properties	~	·	
Prio Recon	Off	System	0"
Before measurement		Body	Off
After measurement	_	HEP	On
Load to viewer	On	HEA	On
Inline movie	Off	Positioning mode	FIX
Auto store images	On	Table position	H
Load to stamp segments	Off	Table position	0 mm
Load images to graphic	Off	MSMA	S - C - T
segments			R >> L
Auto open inline display	Off	Sagittal	
Start measurement without	On	Coronal	A >> P
further preparation		Transversal	F >> H
Wait for user to start	Off	Coil Combine Mode	Adaptive Combine
Start measurements	single	AutoAlign	 D ()
Routine	· ·	Auto Coil Select	Default
Slice group 1		Shim mode	Tune up
Slices	1	Adjust with body coil	Off
Dist. factor	700 %	Confirm freq. adjustment	Off
Position	L5.4 A9.8 H76.5	Assume Silicone	Off
Orientation	Transversal	? Ref. amplitude 1H	0.000 V
Phase enc. dir.	A >> P	Adjustment Tolerance	Auto
Rotation	0.00 deg	Adjust volume	
Phase oversampling	0.00 deg 0 %	Position	Isocenter
FoV read	192 mm	Orientation	Transversal
		Rotation	0.00 deg
FoV phase	100.0 %	R >> L	350 mm
Slice thickness	4.0 mm	A >> P	263 mm
TR	23.60 ms	F >> H	350 mm
TE	8.02 ms	ļ	·
Averages	1	Physio	
Concatenations	1	1st Signal/Mode	Pulse/Trigger
Filter	None	Average cycle	No Signal ms
Coil elements	HEA;HEP	Captured cycle	-not set-
Contrast		Acquisition window	800 ms
Flip angle	15 deg	—— Trigger pulse	1
	13 deg	Trigger delay	0 ms
Averaging mode	Short term	Segments	1
Reconstruction	Magnitude	Phases	33
Measurements	1	America	
Multiple series	Each measurement	Angio	0. 1 1.
1		Flow mode	Single dir.
Resolution	050	Encodings	1
Base resolution	256	Velocity enc.	8 cm/s
Phase resolution	100 %	Direction	Through plane
Phase partial Fourier	Off	Rephased images	On
Interpolation	Off	Magnitude images	On
PAT mode	GRAPPA	Phase images	On
Accel. factor PE	2	Subtract	Off
Ref. lines PE	24	Std-Dev-Sag	Off
		Std-Dev-Sag Std-Dev-Cor	Off
Matrix Coil Mode	Auto (Triple)	Std-Dev-Cor Std-Dev-Tra	Off
Reference scan mode	Integrated		_
Image Filter	Off	Std-Dev-Time	Off Off
Distortion Corr.	Off	MIP-Sag	Off
Prescan Normalize	Off	MIP-Cor	Off
Normalize	Off	MIP-Tra	Off
B1 filter	Off	MIP-Time	Off
Raw filter	Off	Save original images	On
Elliptical filter	Off	Sequence	
	U	Introduction	On
Geometry		—— Asymmetric echo	Off
Multi-slice mode	Sequential	Contrasts	1
Series	Interleaved	Bandwidth	260 Hz/Px
		Danawaan	200 HZH A
		40/	

Flow comp.	No	
RF pulse type Gradient mode RF spoiling	Normal Fast On	
MB Number FOV Shift	1	
Distance22	32	

 $\verb|\USER\AMRIT\Liyong\20150821\t2_haste_tra_p2| \\$

TA: 0:17 P	AT: 2 Voxel size: 1.0×1.0×	4.0 mm Rel. SNR: 1.00 S	IEMENS: haste
Properties		Width	4
Prio Recon	Off	Unfiltered images	Off
	Oli	B1 filter	Off
Before measurement		Raw filter	Off
After measurement		Elliptical filter	On
Load to viewer	On	Mode	Inplane
Inline movie	Off	1	
Auto store images	On	Geometry	
Load to stamp segments	Off	Multi-slice mode	Single shot
Load images to graphic	Off	Series	Interleaved
segments		Chasial ast	None
Auto open inline display	Off	Special sat.	None
Start measurement without	On		
further preparation		Tim CT mode	Off
Wait for user to start	Off	System	
Start measurements	single	Body	Off
I	5g.5		
Routine		HEP	On
Slice group 1		— HEA	On
Slices	40	Positioning mode	FIX
Dist. factor	0 %	Table position	Н
Position	L1.8 A14.8 H44.8	Table position	0 mm
Orientation	Transversal	MSMA	S - C - T
Phase enc. dir.	A >> P		R >> L
Rotation	0.00 deg	Sagittal	
Phase oversampling	0.00 deg 0 %	Coronal	A >> P
FoV read	192 mm	Transversal	F >> H
		Save uncombined	Off
FoV phase	100.0 %	Coil Combine Mode	Adaptive Combine
Slice thickness	4.0 mm	AutoAlign	
TR	395 ms	Auto Coil Select	Default
TE	76 ms	Chima manda	T
Averages	1	Shim mode	Tune up
Concatenations	1	Adjust with body coil	Off
Filter	Normalize, Elliptical filter	Confirm freq. adjustment	Off
Coil elements	HEA;HEP	Assume Silicone	Off
Contract		? Ref. amplitude 1H	0.000 V
Contrast	0"	Adjustment Tolerance	Auto
MTC	Off	Adjust volume	
Magn. preparation	None	Position	Isocenter
Flip angle	117 deg	Orientation	Transversal
Fat suppr.	None	Rotation	0.00 deg
Water suppr.	None	R >> L	350 mm
Restore magn.	Off	A >> P	263 mm
A	Lang tamp	F >> H	350 mm
Averaging mode	Long term	ļ	
Reconstruction	Magnitude	Physio	
Measurements	1	1st Signal/Mode	None
Multiple series	Each measurement	Dark blood	Off
Resolution		Dark blood	
Base resolution	192	Resp. control	Off
Phase resolution	100 %	1	
	5/8	Inline	
Phase partial Fourier		Subtract	Off
Interpolation	Off	Std-Dev-Sag	Off
PAT mode	GRAPPA	Std-Dev-Cor	Off
Accel. factor PE	2	Std-Dev-Tra	Off
Ref. lines PE	24	Std-Dev-Time	Off
Matrix Coil Mode	Auto (Triple)	MIP-Sag	Off
Reference scan mode	Integrated	MIP-Cor	Off
Reference Scarrinode	integrated	MIP-Tra	Off
Image Filter	Off	MIP-Time	Off
Distortion Corr.	Off	_	On
Prescan Normalize	Off	Save original images	Oil
Normalize	On	Sequence	
Intensity	Medium	Introduction	On
Cut off	20	Dimension	2D
Cut on	20	1	

Contrasts	1
Bandwidth	592 Hz/Px
Flow comp.	No
Allowed delay	30 s
Echo spacing	4.78 ms
 Turbo factor	192
RF pulse type	Fast
Gradient mode	Fast

\\USER\AMRIT\Liyong\20150821\ep_seg_fid33_venc8_4th_ventrical

TA: 2:24	Voxel size: 1.4×1.4×4.0 mm	Rel. SNR: 1.00 USER: e	p_seg_fid_venc
Proportion		Body	Off
Properties Prio Recon	Off	- HEP	On
Before measurement	Oil	HEA	On
After measurement		Positioning mode	FIX
Load to viewer	On	Table position	H
Inline movie	Off	Table position	П 0 mm
		MSMA	S - C - T
Auto store images	On Off		
Load to stamp segments	Off Off	Sagittal Coronal	R >> L A >> P
Load images to graphic	Oil	Transversal	F>> H
segments	0#		
Auto open inline display	Off	Save uncombined	Off
Start measurement without	On	Coil Combine Mode	Sum of Squares
further preparation	0"	AutoAlign	D-f!!
Wait for user to start	Off	Auto Coil Select	Default
Start measurements	single	Shim mode	Standard
Coutine		Adjust with body coil	Off
Slice group 1		Confirm freq. adjustment	Off
Slices	1	Assume Silicone	Off
Dist. factor	50 %	? Ref. amplitude 1H	0.000 V
Position	L5.4 A9.8 H99.2	Adjustment Tolerance	Auto
Orientation	Transversal	Adjust volume	rato
Phase enc. dir.	A >> P	Position	L5.4 A9.8 H99.2
Rotation	0.00 deg	Orientation	Transversal
Phase oversampling	0.00 deg 0 %	Rotation	0.00 deg
FoV read	180 mm	R >> L	180 mm
FoV phase	100.0 %	A >> P	180 mm
•		F >> H	
Slice thickness	4.0 mm 36 ms	Г >> П	4 mm
TR TE		Physio	
	18 ms 1	1st Signal/Mode	None
Averages	1	Segments	4
Concatenations Filter	None		0"
		Resp. control	Off
Coil elements	HEA;HEP	Sequence	
Contrast		Introduction	Off
MTC	Off	Dimension	2D
Flip angle	15 deg	Bandwidth	1502 Hz/Px
Fat suppr.	None	Free echo spacing	Off
		Echo spacing	0.87 ms
Averaging mode	Long term		
Reconstruction	Magnitude	EPI factor	33
Measurements	800	RF pulse type	Normal
Pause after meas.	0.0 s	Gradient mode	Fast
Multiple series	Off	RF spoiling	On
Resolution		Flow Compensation	Off
Base resolution	128	Centric Reorder	On
Phase resolution	100 %	Pat Ref Scan	On
Phase partial Fourier	Off	VENC value	160
Interpolation	Off		
		Undersampled	On
Matrix Coil Mode	Auto (CP)		
Distortion Corr.	Off		
Prescan Normalize	Off		
Raw filter	Off		
Elliptical filter	Off		
Hamming	Off		
Geometry			
Multi-slice mode	Sequential	-	
Series	Ascending		
Special sat.	None		

System

\\USER\AMRIT\Liyong\20150821\fl_fq_mb1f1p2_venc8_res256_4th_monroe TA: 1:54 PAT: 2 Voxel size: 0.8×0.8×4.0 mm Rel. SNR: 1.00 USER: fl_fq_mb

Properties		Special sat.	None
Prio Recon	Off	System	
Before measurement		Body	Off
After measurement		HEP	On
Load to viewer	On	HEA	On
Inline movie	Off	1127	
Auto store images	On	Positioning mode	FIX
Load to stamp segments	Off	Table position	Н
Load images to graphic	Off	Table position	0 mm
segments	Oil	MSMA	S - C - T
Auto open inline display	Off	Sagittal	R >> L
	On	Coronal	A >> P
Start measurement without	On	Transversal	F >> H
further preparation	Off	Coil Combine Mode	Adaptive Combine
Wait for user to start		AutoAlign	·
Start measurements	single	Auto Coil Select	Default
Routine		— Shim mode	Tune up
Slice group 1		Adjust with body coil	Off
Slices	1	Confirm freq. adjustment	Off
Dist. factor	700 %	Assume Silicone	Off
Position	L5.4 A9.8 H99.2	? Ref. amplitude 1H	0.000 V
Orientation	Transversal		*****
Phase enc. dir.	A >> P	Adjustment Tolerance	Auto
Rotation	0.00 deg	Adjust volume	lacconton
Phase oversampling	0 %	Position	Isocenter
FoV read	192 mm	Orientation	Transversal
FoV phase	100.0 %	Rotation	0.00 deg
Slice thickness	4.0 mm	R >> L	350 mm
TR	23.60 ms	A >> P	263 mm
TE	8.02 ms	F >> H	350 mm
Averages	1	Physio	
Concatenations	1	1st Signal/Mode	Pulse/Trigger
Filter	None	Average cycle	No Signal ms
Coil elements	HEA;HEP	Captured cycle	-not set-
Con diditionts	11273,1121	Acquisition window	800 ms
Contrast		Trigger pulse	1
Flip angle	15 deg	Trigger pulse Trigger delay	0 ms
Averaging mode	Short term	Segments	
Averaging mode			1
Reconstruction	Magnitude	Phases	33
Measurements	1	Angio	
Multiple series	Each measurement	Flow mode	Single dir.
Resolution		Encodings	1
Base resolution	256	Velocity enc.	8 cm/s
Phase resolution	100 %	Direction	Through plane
Phase partial Fourier	Off	Rephased images	On
Interpolation	Off	Magnitude images	On
		Phase images	On
PAT mode	GRAPPA		
Accel. factor PE	2	Subtract	Off
Ref. lines PE	24	Std-Dev-Sag	Off
Matrix Coil Mode	Auto (Triple)	Std-Dev-Cor	Off
Reference scan mode	Integrated	Std-Dev-Tra	Off
Imaga Filtor	Off	Std-Dev-Time	Off
Image Filter	_	MIP-Sag	Off
Distortion Corr.	Off	MIP-Cor	Off
Prescan Normalize	Off	MIP-Tra	Off
Normalize	Off	MIP-Time	Off
B1 filter	Off	Save original images	On
Raw filter	Off	1	
FIG. 6: 1 (9)		0	
Elliptical filter	Off	Sequence	
		Introduction	On O"
Geometry	Off	Introduction Asymmetric echo	On Off
		Introduction	

Flow comp.	No
RF pulse type Gradient mode RF spoiling	Normal Fast On
MB Number FOV Shift	1 1
Distance22	32

\\USER\AMRIT\Liyong\20150821\ep_seg_fid33_venc8_aqueduct

TA: 2:24	Voxel size: 1.4×1.4×4.0 mm	Rel. SNR: 1.00 USER: e _l	o_seg_fid_venc
Properties		Body	Off
Prio Recon	Off	_ HEP	On
Before measurement	Oli	HEA	On
After measurement		Positioning mode	FIX
Load to viewer	On	Table position	H
Inline movie	Off	Table position	0 mm
Auto store images	On	MSMA	S - C - T
Load to stamp segments	Off	Sagittal	R >> L
Load images to graphic	Off	Coronal	A >> P
segments		Transversal	F >> H
Auto open inline display	Off	Save uncombined	Off
Start measurement without	On	Coil Combine Mode	Sum of Squares
further preparation		AutoAlign	
Wait for user to start	Off	Auto Coil Select	Default
Start measurements	single		
Navidia a	3	Shim mode	Standard
Routine		Adjust with body coil	Off
Slice group 1		Confirm freq. adjustment	Off
Slices	1	Assume Silicone	Off
Dist. factor	50 %	? Ref. amplitude 1H	0.000 V
Position	L5.4 A8.9 H83.0	Adjustment Tolerance	Auto
Orientation	Transversal	Adjust volume	
Phase enc. dir.	A >> P	Position	L5.4 A8.9 H83.0
Rotation	0.00 deg	Orientation	Transversal
Phase oversampling	0 %	Rotation	0.00 deg
FoV read	180 mm	R >> L	180 mm
FoV phase	100.0 %	A >> P	180 mm
Slice thickness	4.0 mm	F >> H	4 mm
TR	36 ms	Physio	
TE	18 ms	1st Signal/Mode	None
Averages	1	Segments	4
Concatenations	1		
Filter	None	Resp. control	Off
Coil elements	HEA;HEP	Sequence	
Contrast		Introduction	Off
MTC	Off	Dimension	2D
Flip angle	15 deg	Bandwidth	1502 Hz/Px
Fat suppr.	None	Free echo spacing	Off
		Echo spacing	0.87 ms
Averaging mode	Long term		
Reconstruction	Magnitude	EPI factor	33
Measurements	800	RF pulse type	Normal
Pause after meas.	0.0 s	Gradient mode	Fast
Multiple series	Off	RF spoiling	On
Resolution		Flow Compensation	Off
Base resolution	128	Centric Reorder	On
Phase resolution	100 %	Pat Ref Scan	On
Phase partial Fourier	Off	VENC value	160
Interpolation	Off	Undersampled	On
Matrix Coil Mode	Auto (CP)	- Chacheampiea	3.1
Distortion Corr.	Off		
Prescan Normalize	Off		
Raw filter	Off		
Elliptical filter	Off		
Hamming	Off		
Geometry		<u>_</u>	
Multi-slice mode	Sequential		
Corioo	Ascending		
Series	7 toochaing		

System

\\USE	RVAMRIT	\Liyong\20150821\fl_fq_mb1	f1p2_venc8_res2	56_aqueduct
TA: 1:54	PAT: 2	Voxel size: 0.8×0.8×4.0 mm	Rel. SNR: 1.00	USER: fl_fq_mb

Properties		Special sat.	None
Prio Recon	Off	System	
Before measurement		Body	Off
After measurement		HEP	On
Load to viewer	On	HEA	On
Inline movie	Off		
Auto store images	On	Positioning mode	FIX
Load to stamp segments	Off	Table position	Н
Load images to graphic	Off	Table position	0 mm
segments	3	MSMA	S - C - T
Auto open inline display	Off	Sagittal	R >> L
Start measurement without	On	Coronal	A >> P
further preparation	011	Transversal	F >> H
Wait for user to start	Off	Coil Combine Mode	Adaptive Combine
Start measurements	single	AutoAlign	
l	Single	Auto Coil Select	Default
Routine		—— Shim mode	Tune up
Slice group 1	4	Adjust with body coil	Off
Slices	1	Confirm freq. adjustment	Off
Dist. factor	700 %	Assume Silicone	Off
Position	L5.4 A8.9 H83.0	? Ref. amplitude 1H	0.000 V
Orientation	Transversal	Adjustment Tolerance	Auto
Phase enc. dir.	A >> P	Adjust volume	. 1010
Rotation	0.00 deg	Position	Isocenter
Phase oversampling	0 %	Orientation	Transversal
FoV read	192 mm	Rotation	0.00 deg
FoV phase	100.0 %	R >> L	350 mm
Slice thickness	4.0 mm	A >> P	263 mm
TR	23.60 ms	F >> H	
TE	8.02 ms	r >> п	350 mm
Averages	1	Physio	
Concatenations	1	1st Signal/Mode	Pulse/Trigger
Filter	None	Average cycle	No Signal ms
Coil elements	HEA;HEP	Captured cycle	-not set-
Contract		Acquisition window	800 ms
Contrast	1E dog	Trigger pulse	1
Flip angle	15 deg	Trigger delay	0 ms
Averaging mode	Short term	Segments	1
Reconstruction	Magnitude	Phases	33
Measurements	1	I .	
Multiple series	Each measurement	Angio	Oise sel se alice
Pagalistica		Flow mode	Single dir.
Resolution	050	Encodings	1
Base resolution	256	Velocity enc.	8 cm/s
Phase resolution	100 %	Direction	Through plane
Phase partial Fourier	Off	Rephased images	On
Interpolation	Off	Magnitude images	On
PAT mode	GRAPPA	Phase images	On
Accel, factor PE	2	Subtract	Off
Ref. lines PE	24	Std-Dev-Sag	Off
Matrix Coil Mode	Auto (Triple)	Std-Dev-Gag Std-Dev-Cor	Off
Reference scan mode	Integrated	Std-Dev-Col	Off
		Std-Dev-Time	Off
Image Filter	Off	MIP-Sag	Off
Distortion Corr.	Off	MIP-Cor	Off
Prescan Normalize	Off	MIP-Cor MIP-Tra	Off
Normalize	Off		
B1 filter	Off	MIP-Time	Off
Raw filter	Off	Save original images	On
Elliptical filter	Off	Sequence	
		Introduction	On
Geometry		Asymmetric echo	Off
Multi-slice mode	Sequential	Contrasts	1
Series	Interleaved	Bandwidth	260 Hz/Px

Flow comp.	No
RF pulse type	Normal
Gradient mode	Fast
RF spoiling	On
MB Number	1
FOV Shift	1
Distance22	32

\\USER\AMRIT\Liyong\20150821\localizer

Properties	TA: 0:13 P/	AT: Off Voxel size: 1.1×1.0×	7.0 mm Rel. SNR: 1.00	SIEMENS: gre
Prio Recon Definition Def	Droportion		Phase resolution	90 %
Before measurement Load to viewer On Inflier position On Inflier On In		0"	Phase partial Fourier	Off
Alter measurement Load to viewer On Inline movie Off Matrix Coll Mode Auto (CP) Inline movie Off Matrix Coll Mode Auto (CP) Auto (Coll Mode (CP) Auto (Coll		Oli	Interpolation	On
Load to viewer On			DAT mode	None
Inline movie		On		
Auto store images				Adio (Ci)
Load to stamp segments			Image Filter	_
Load images to graphic segments Auto open inline display Off segments		_		Off
Segments				* · ·
Auto open inline display Off Start measurement without further preparation Off Start measurements Single Start measurements Start measurements Single Start measurements Start measurements Single Start measurements Start measurements Start measurements Start measurement St				_
Start measurement without further preparation Wait for user to start Off Elliptical filter Off Content Off Content Con		Off		
Further preparation Wait for user to start Off Start measurements Single Start measurements Single Start measurements Single Single Silice group 1 Silices 1 Silices 1 Silices Starturation Sagittal Starturation Sagittal Starturation Starturation Sagittal Starturation Sagittal Starturation Startura			1 -	
Wait for user to start Off Start measurements Single Souther				
State Sequential Sequenti		Off		
Slice group 1 Slices	Start measurements	single	Mode	inpiane
Multi-slice mode Sequential	Pouting		Geometry	
Silices 1			- Multi-slice mode	Sequential
Dist. factor		1	Series	Interleaved
Position			Saturation mode	Standard
Orientation Sagittal Phase enc. dir. A >> P Tim CT mode Off Phase enc. dir. A >> P Tim CT mode Off Slices group 2 Silces 1 Body Off Slices 1 Body Off Off Postition Isocenter HEP On Orientation Transversal Postitioning mode REF Phase enc. dir. A >> P Table position H Plass enc. dir. A >> P Table position H Slice group 3 Isocenter Trable position H Slice group 3 Isocenter Trable position H Slice group 3 Isocenter Transversal S - C - T Slice of to group 3 Isocenter Transversal A >> P Postition Isocenter Transversal A >> P Postition Isocenter Transversal A >> P Postition Auto Coil Select Default Rotation Auto Coil Select Default <				
Phase enc. dir. A >> P Tim CT mode Off Rotation 0.00 deg System Slices group 2 Silces 1 Body Off Dist. factor 20 % HEP On Position Isocenter HEA On Orientation Transversal Positioning mode REF Phase enc. dir. A >> P Table position H Rotation 0.00 deg MSMA S · C · T Slices of 1 Sagital R > L Dist. factor 20 % Coronal A >> P Position Isocenter Transversal R >> L Orientation Coronal A >> P A >> P Orientation Coronal A >> P Averagersal pline Auto Acidion O.00 deg Auto Acidion O.00 deg Auto Coil Select Default Fov read 250 mm Auto Coil Select Default Shim mode Tune up Adjust with body coil Off Off Confirm freq, adjustment Assume Sili				
Rotation Slice group 2 System System		· ·		
Silce group 2 Silce s 1 Body Off			Tim C1 mode	OII
Silices		0.00 409	System	
Desition Socenter Position Socenter Position Transversal Phase enc. dir. A > P Position Table position H Table position Table		1	Body	Off
Note	Dist. factor	20 %	HEP	On
Phase enc. dir. A >> P	Position		HEA	On
Phase enc. dir. A >> P Rotation O.00 deg	Orientation	Transversal	Positioning mode	DEE
Rotation Slice group 3 Slices 1	Phase enc. dir.	A >> P		
Silice group 3	Rotation	0.00 deg		
Silces 1 20 % Coronal R >> L Coronal A >> P	Slice group 3	-		-
Dist. factor	Slices	1		
Position Socenter Coronal Save uncombined Off Off	Dist. factor	20 %		
Orientation Coronal Phase enc. dir. R >> L Save uncombined Coil Combine Mode Adaptive Combine Adaptive	Position	Isocenter		
Phase enc. dir. Rotation Phase oversampling FoV read FoV phase Slice thickness TR 8.6 ms TR Averages Concatenations Filter Coil elements FERSE Staypr. Water suppr. Averaging mode Resolution Resolution Roy read Slice thickness Size thickness TO mm Adjust with body coil Confirm freq. adjustment Adjust with body coil Confirm freq. adjustment Off Confirm freq. adjustment Off Confirm freq. adjustment Off Confirm freq. adjustment Off Assume Silicene Off Confirm freq. adjustment Off Assume Silicene Auto Adjust wolume Position Resolution Filip angle Segments Filer Ferse frequency Adjust with body coil Off Confirm freq. adjustment Off Confirm freq. adjustment Off Confirm freq. adjustment Off Confirm freq. adjustment Off Assume Silicene Off Confirm freq. adjustment Off Confirm freq. adjustment Off Confirm freq. adjustment Off Assume Silicene Off Confirm freq. adjustment Off Assume Silicene Off Confirm freq. adjustment Off Confirm freq. adjustment Off Confirm freq. adjustment Off Confirm freq. adjustment Off Assume Silicene Off Confirm freq. adjustment Off Off Confirm freq. adjustment Off Confir	Orientation			
Rotation			Coil Combine Mode	Adaptive Combine
FoV read				•
FoV phase 100.0 % Shim mode Tune up Adjust with body coil Off Confirm freq. adjustment One On			Auto Coil Select	Default
Slice thickness 7.0 mm Adjust with body coil Off			Oh: d-	T
TR 8.6 ms Confirm freq. adjustment Off TE 4.00 ms Assume Silicone Off Averages 2 Adjustment Tolerance Auto Concatenations 3 Adjustment Tolerance Auto Filter Prescan Normalize, Elliptical filter Position Isocenter Coil elements HEA;HEP Orientation Transversal Rotation 0.00 deg R >> L 350 mm More A >> P 263 mm Magn. preparation None F >> H 350 mm Fat suppr. None Physio 1st Signal/Mode None Water suppr. None Segments 1 Averaging mode Short term Dark blood Off Resp. control Off Resp. control Off Multiple series Each measurement Inline Subtract Off Resolution Off Liver registration Off				•
TE 4.00 ms Averages 2 Concatenations 3 Filter Prescan Normalize, Elliptical filter Coil elements HEA;HEP Contrast TD 0 ms MTC Off Asy P 263 mm MTC Magn. preparation None Flip angle 20 deg Fat suppr. Water suppr. None Water suppr. None Assume Silicone Off Page resolution Assume Silicone ? Ref. amplitude 1H 0.000 V Adjustment Tolerance Auto Adjust volume Position Isocenter Orientation Transversal Rotation 0.00 deg R >> L 350 mm A >> P 263 mm F >> H 350 mm A >> P 263 mm F >> H 350 mm A >> P 350 mm A >> P 350 mm Dark blood Off Resp. control Off Resp. control Off Resp. control Off Coff Coff Coff Coff Coff Coff Coff				
Averages 2 Concatenations 3 Filter Prescan Normalize, Elliptical filter Position Isocenter Coil elements HEA;HEP Orientation Transversal Rotation 0.00 deg TD Oms Off F>> H Signal/Mode None Filip angle 20 deg Fat suppr. None Water suppr. None Water suppr. None Averaging mode Short term Resolution Magnitude Measurements 1 Multiple series Each measurement Resolution Prescan Normalize, Elliptical Adjust volume Position Isocenter Orientation Transversal Rotation 0.00 deg R >> L 350 mm AA >> P 263 mm F >> H 350 mm Physio 1st Signal/Mode None Segments 1 Dark blood Off Resp. control Off Resp. control Off Resp. control Off Resp. control Off Liver registration Off				
Concatenations Filter Prescan Normalize, Elliptical filter Coil elements HEA;HEP Orientation TD Off Magn. preparation Filip angle Fat suppr. Water suppr. Averaging mode Reconstruction Measurements Multiple series Resolution Resolution Adjustment Tolerance Adjust volume Position Orientation Transversal Rotation O.00 deg R >> L 350 mm A >> P 263 mm F >> H 350 mm Physio 1st Signal/Mode None Segments 1 Dark blood Off Resp. control Off Resp. control Off Liver registration				_
Filter Prescan Normalize, Elliptical filter Position Isocenter Coil elements HEA;HEP Orientation Transversal Rotation 0.00 deg R >> L 350 mm A >> P 263 mm Filp angle 20 deg Fat suppr. None Pater suppr. None Segments 1 Averaging mode Reconstruction Magnitude Resolution Magnitude Measurements 1 Multiple series Each measurement Inline Resolution Adjust volume Position Isocenter Orientation Transversal Rotation 0.00 deg R >> L 350 mm A >> P 263 mm F >> H 350 mm None Physio 1st Signal/Mode None Segments 1 Dark blood Off Resp. control Off Resp. control Off Subtract Off Liver registration Off				
Coil elements				, 1010
Contrast TD 0 ms A >> P 263 mm MTC Off F >> H 350 mm Magn. preparation Flip angle 20 deg Fat suppr. None Water suppr. None Water suppr. None Averaging mode Short term Reconstruction Magnitude Resonstruction Magnitude Resonstruction Magnitude Resonstruction Magnitude Resonstruction Magnitude Resolution Resolution Resolution Orientation Transversal Rotation 0.00 deg R >> L 350 mm A >> P 263 mm F >> H 350 mm None Ist Signal/Mode None Segments 1 Dark blood Off Resp. control Off Inline Subtract Off Liver registration Off	i iitei			Isocenter
Rotation 0.00 deg R >> L 350 mm A >> P 263 mm A > P	Coil elements			
Contrast TD 0 ms	ı			
TD 0 ms 0 ms A >> P 263 mm MTC Off F >> H 350 mm Magn. preparation None Flip angle 20 deg Physio Fat suppr. None Segments 1 Averaging mode Short term Dark blood Off Reconstruction Magnitude Resourcements 1 Multiple series Each measurement Inline Resolution Resolution Subtract Off Liver registration Off				
Magn. preparation None Flip angle 20 deg Fat suppr. None Water suppr. None Averaging mode Short term Reconstruction Magnitude Measurements 1 Multiple series Each measurement Resolution Subtract Control Off Liver registration Off Liver registration Off			-	
Flip angle 20 deg Fat suppr. None Water suppr. None Averaging mode Short term Reconstruction Magnitude Measurements Multiple series Resolution Resolution Page resolution Flags resolution Flags resolution Page 1 st Signal/Mode None Segments 1 Dark blood Resp. control Resp. control Off Inline Subtract Liver registration Off Liver registration Off			F >> H	350 mm
Fat suppr. None Segments 1 Averaging mode Short term Dark blood Off Reconstruction Magnitude Resp. control Off Measurements 1 Multiple series Each measurement Inline Resolution Subtract Off Liver registration Off			Physic	
Water suppr. Averaging mode Short term Dark blood Off Reconstruction Magnitude Resp. control Off Measurements 1 Multiple series Each measurement Inline Resolution Subtract Off Liver registration Off	. •	<u> </u>		None
Averaging mode Short term Dark blood Off Reconstruction Magnitude Resp. control Off Measurements 1 Multiple series Each measurement Inline Resolution Subtract Off Liver registration Off				
Reconstruction Magnitude Resp. control Off Measurements 1 Multiple series Each measurement Inline Resolution Subtract Off Liver registration Off	vvater suppr.	inone	Segments	I
Reconstruction Magnitude Resp. control Off Measurements 1 Multiple series Each measurement Inline Resolution Subtract Off Liver registration Off	Averaging mode	Short term	Dark blood	Off
Measurements 1 Multiple series Each measurement Inline Resolution Resp. control Coll Resp. control Coll Coll			Poor control	Off
Resolution Subtract Off Liver registration Off		1	Resp. control	OII
Resolution Subtract Off Liver registration Off	Multiple series	Each measurement	Inline	
Race recolution 256 Liver registration Off			Subtract	Off
Std-Dev-Sag Off		256		Off
	Dase resolution	200	Std-Dev-Sag	Off

Std-Dev-Cor	Off
Std-Dev-Tra	Off
Std-Dev-Time	Off
MIP-Sag	Off
MIP-Cor	Off
MIP-Tra	Off
MIP-Time	Off
Save original images	On
Wash - In	Off
Wash - Out	Off
TTP	Off
PEI	Off
MIP - time	Off

Sequence

Introduction	On
Dimension	2D
Phase stabilisation	Off
Asymmetric echo	Allowed
Contrasts	1
Bandwidth	320 Hz/Px
Flow comp.	No
Allowed delay	0 s
RF pulse type	Normal
Gradient mode	Normal
Excitation	Slice-sel.
RF spoiling	On

\\USER\AMRIT\Liyong\20150821\t2_haste_sag_p2

perties		Width	4
Prio Recon	Off	Unfiltered images	Off
Before measurement	Oli	B1 filter	Off
After measurement		Raw filter	Off
Load to viewer	On	Elliptical filter	On
Inline movie	Off	Mode	Inplane
Auto store images	On	Geometry	
Load to stamp segments	Off	Multi-slice mode	Single shot
Load images to graphic	Off	Series	Interleaved
segments	3 11		
Auto open inline display	Off	Special sat.	None
Start measurement without	On		
further preparation	3.1	Tim CT mode	Off
Wait for user to start	Off	System	
Start measurements	single	System	Off
	9.~	Body HEP	On
outine		— HEP — HEA	On On
Slice group 1		П С А	
Slices	20	Positioning mode	FIX
Dist. factor	0 %	Table position	Н
Position	L0.5 A19.7 H39.6	Table position	0 mm
Orientation	Sagittal	MSMA	S - C - T
Phase enc. dir.	A >> P	Sagittal	R >> L
Rotation	0.00 deg	Coronal	A >> P
Phase oversampling	0 %	Transversal	F >> H
FoV read	192 mm	Save uncombined	Off
FoV phase	100.0 %	Coil Combine Mode	Adaptive Combine
Slice thickness	2.0 mm	AutoAlign	'
TR	639 ms	Auto Coil Select	Default
TE	76 ms		
Averages	1	Shim mode	Tune up
Concatenations	1	Adjust with body coil	Off
Filter	Normalize, Elliptical filter	Confirm freq. adjustment	Off
Coil elements	HEA;HEP	Assume Silicone	Off
ontrast		? Ref. amplitude 1H	0.000 V
MTC	Off	Adjustment Tolerance	Auto
	None	Adjust volume	
Magn. preparation		Position	Isocenter
Flip angle	110 deg	Orientation	Transversal
Fat suppr.	None	Rotation	0.00 deg
Water suppr.	None Off	R >> L	350 mm
Restore magn.	OII	A >> P	263 mm
Averaging mode	Long term	F >> H	350 mm
Reconstruction	Magnitude	Physio	
Measurements	1	1st Signal/Mode	None
Multiple series	Each measurement		
·		Dark blood	Off
esolution Page resolution	102	Resp. control	Off
Base resolution	192	· ·	U
Phase resolution	100 %	Inline	
Phase partial Fourier	5/8	Subtract	Off
Interpolation	Off	Std-Dev-Sag	Off
PAT mode	GRAPPA	Std-Dev-Cor	Off
Accel. factor PE	2	Std-Dev-Tra	Off
Ref. lines PE	24	Std-Dev-Time	Off
Matrix Coil Mode	Auto (Triple)	MIP-Sag	Off
Reference scan mode	Integrated	MIP-Cor	Off
		MIP-Tra	Off
Image Filter	Off	MIP-Time	Off
Distortion Corr.	Off	Save original images	On
Prescan Normalize	Off	1	-
Normalize	On	Sequence	
Intensity	Medium	Introduction	On
Cut off	20	Dimension	2D

Contrasts	1
Bandwidth	592 Hz/Px
Flow comp.	No
Allowed delay	30 s
Echo spacing	5.82 ms
 Turbo factor	192
RF pulse type	Fast
Gradient mode	Fast

 $\verb|\USER\AMRIT\Liyong\20150821\t2_haste_tra_p2| \\$

TA: 0:23 PA	AT: Off Voxel size: 1.0×1.0	×4.0 mm Rel. SNR: 1.00	SIEMENS: haste
Dranartica		Raw filter	Off
Properties Properties	0"	— Elliptical filter	On
Prio Recon	Off	Mode	Inplane
Before measurement After measurement		Geometry	
Load to viewer	On	Multi-slice mode	Single shot
Inline movie	Off	Series	Interleaved
Auto store images	On		·····
Load to stamp segments	Off	Special sat.	None
Load images to graphic	Off		
segments		Tim CT mode	Off
Auto open inline display	Off	System	
Start measurement without	On	Body	Off
further preparation		HEP	On
Wait for user to start	Off	HEA	On
Start measurements	single		
Douting		Positioning mode	FIX
Routine		Table position	Н
Slice group 1 Slices	40	Table position	0 mm
Dist. factor	0 %	MSMA	S - C - T
Position	R2.0 A11.2 H54.0	Sagittal	R >> L
Orientation	Transversal	Coronal	A >> P
Phase enc. dir.	A >> P	Transversal	F >> H
Rotation	0.00 deg	Save uncombined	Off
Phase oversampling	0.00 deg 0 %	Coil Combine Mode	Adaptive Combine
FoV read	192 mm	AutoAlign	Default
FoV phase	100.0 %	Auto Coil Select	Default
Slice thickness	4.0 mm	Shim mode	Tune up
TR	540 ms	Adjust with body coil	Off
TE	76 ms	Confirm freq. adjustment	Off
Averages	1	Assume Silicone	Off
Concatenations	1	? Ref. amplitude 1H	0.000 V
Filter	Normalize, Elliptical filter	Adjustment Tolerance	Auto
Coil elements	HEA;HEP	Adjust volume	
_	,	Position	Isocenter
Contrast	0"	Orientation	Transversal
	Off None	Rotation	0.00 deg
Magn. preparation		R >> L	350 mm
Flip angle	117 deg None	A >> P	263 mm
Fat suppr. Water suppr.	None	F >> H	350 mm
Restore magn.	Off	Physio	
		1st Signal/Mode	None
Averaging mode	Long term	Dark blood	Off
Reconstruction Measurements	Magnitude 1		
Multiple series	Each measurement	Resp. control	Off
	Laci measarement	Inline	
Resolution	400	Subtract	Off
Base resolution	192	Std-Dev-Sag	Off
Phase resolution	100 %	Std-Dev-Cor	Off
Phase partial Fourier	5/8	Std-Dev-Tra	Off
Interpolation	Off	Std-Dev-Time	Off
PAT mode	None	MIP-Sag	Off
Matrix Coil Mode	Auto (CP)	MIP-Cor	Off
Imaga Filter		MIP-Tra	Off
Image Filter	Off	MIP-Time	Off
Distortion Corr. Prescan Normalize	Off	Save original images	On
Normalize	Off	Sequence	
	On Modium	Introduction	On
Intensity Cut off	Medium 20	Dimension	2D
Width	20 4	Contrasts	1
Unfiltered images	Off	Bandwidth	592 Hz/Px
B1 filter	Off	Flow comp.	No
J	J.,	•	

Allowed delay Echo spacing	30 s 4.78 ms	
Turbo factor RF pulse type Gradient mode	192 Fast Fast	

\\USER\AMRIT\Liyong\20150821\fl_fq_mb2_venc8_res256_nav PAT: Off Voxel size: 0.8×0.8×4.0 mm Rel. SNR: 1.00 USER

USER: fl_fq_mb

TA: 0:15

Donou aution		HEP	On
Properties Properties	0#	HEA	On
Prio Recon	Off	B *** :	
Before measurement		Positioning mode	FIX
After measurement		Table position	Н
Load to viewer	On	Table position	0 mm
Inline movie	Off	MSMA	S-C-T
Auto store images	On	Sagittal	R >> L
Load to stamp segments	Off	Coronal	A >> P
Load images to graphic	Off	Transversal	F >> H
segments		Coil Combine Mode	Adaptive Combine
Auto open inline display	Off	AutoAlign	
Start measurement without	On	Auto Coil Select	Default
further preparation		Shim mode	Tune up
Wait for user to start	Off	Adjust with body coil	Off
Start measurements	single	Confirm freq. adjustment	Off
Routine		Assume Silicone	Off
Slice group 1		? Ref. amplitude 1H	0.000 V
Slices	2	Adjustment Tolerance	Auto
Dist. factor	1700 %	Adjust volume	Auto
Position	L0.0 A13.1 H54.0	Position	Isocenter
Orientation	Transversal	Orientation	Transversal
Phase enc. dir.	A >> P	Rotation	0.00 deg
Rotation	0.00 deg	Rotation R >> L	350 mm
	0.00 deg 0 %	A >> P	263 mm
Phase oversampling FoV read	192 mm	F >> H	350 mm
		Г >> П	350 11111
FoV phase	100.0 %	Physio	
Slice thickness	4.0 mm	1st Signal/Mode	None
TR	23.60 ms	Segments	1
TE Average	8.02 ms	1	
Averages	1	Angio	<u> </u>
Concatenations	2 Nana	Flow mode	Single dir.
Filter	None	Encodings	1
Coil elements	HEA;HEP	Velocity enc.	8 cm/s
Contrast		Direction	Through plane
Flip angle	15 deg	Rephased images	On
		Magnitude images	On
Averaging mode	Short term	Phase images	On
Reconstruction	Magnitude	Subtract	Off
Measurements	1	Std-Dev-Sag	Off
Multiple series	Each measurement	Std-Dev-Cor	Off
Resolution		Std-Dev-Tra	Off
Base resolution	256	Std-Dev-Time	Off
Phase resolution	100 %	MIP-Sag	Off
Phase partial Fourier	Off	MIP-Cor	Off
Interpolation	Off	MIP-Tra	Off
	OII	···· MIP-Time	Off
PAT mode	None	Save original images	On
Matrix Coil Mode	Auto (CP)	Save original irriages	Oli
las a sa Ellisa	O#	Sequence	
Image Filter	Off	Introduction	On
Distortion Corr.	Off	Asymmetric echo	Off
Prescan Normalize	Off	Contrasts	1
Normalize	Off	Bandwidth	260 Hz/Px
B1 filter	Off	Flow comp.	No
Raw filter	Off		
Elliptical filter	Off	RF pulse type	Normal
Geometry		Gradient mode	Fast
	Sequential	RF spoiling	On
	Joquonilai		
Multi-slice mode		l MR Number	1
	Interleaved	MB Number	1
Multi-slice mode		FOV Shift	1
Multi-slice mode Series	Interleaved		

Rel. SNR: 1.00

USER: fl_fq_mb

Voxel size: 0.8×0.8×4.0 mm

PAT: 2

TA: 1:54

Properties		Special sat.	None
Prio Recon	Off	System	
Before measurement		Body	Off
After measurement		HEP	On
Load to viewer	On	HEA	On
Inline movie	Off		
Auto store images	On	Positioning mode	FIX
Load to stamp segments	Off	Table position	Н
Load images to graphic	Off	Table position	0 mm
segments	0.11	MSMA	S - C - T
Auto open inline display	Off	Sagittal	R >> L
Start measurement without	On	Coronal	A >> P
further preparation	Oli	Transversal	F >> H
Wait for user to start	Off	Coil Combine Mode	Adaptive Combine
Start measurements	single	AutoAlign	
	Sirigie	Auto Coil Select	Default
Routine		—— Shim mode	Tune up
Slice group 1		Adjust with body coil	Off
Slices	1	Confirm freq. adjustment	Off
Dist. factor	700 %	Assume Silicone	Off
Position	L0.0 A13.1 H18.0	? Ref. amplitude 1H	0.000 V
Orientation	Transversal	Adjustment Tolerance	Auto
Phase enc. dir.	A >> P	Adjust volume	Auto
Rotation	0.00 deg	Position	Isocenter
Phase oversampling	0 %	Orientation	Transversal
FoV read	192 mm		
FoV phase	100.0 %	Rotation	0.00 deg
Slice thickness	4.0 mm	R >> L	350 mm
TR	23.60 ms	A >> P	263 mm
TE	8.02 ms	F >> H	350 mm
Averages	1	Physio	
Concatenations	1	1st Signal/Mode	Pulse/Trigger
Filter	None	Average cycle	No Signal ms
Coil elements	HEA;HEP	Captured cycle	-not set-
	,	Acquisition window	800 ms
Contrast		Trigger pulse	1
Flip angle	15 deg	Trigger delay	0 ms
Averaging mode	Short term	Segments	1
Reconstruction	Magnitude	Phases	33
Measurements	1	I	33
Multiple series	Each measurement	Angio	
·	Eddifficasarcificit	Flow mode	Single dir.
Resolution		Encodings	1
Base resolution	256	Velocity enc.	8 cm/s
Phase resolution	100 %	Direction	Through plane
Phase partial Fourier	Off	Rephased images	On .
Interpolation	Off	Magnitude images	On
		···· Phase images	On
PAT mode	GRAPPA		
Accel. factor PE	2	Subtract	Off
Ref. lines PE	24	Std-Dev-Sag	Off
Matrix Coil Mode	Auto (Triple)	Std-Dev-Cor	Off
Reference scan mode	Integrated	Std-Dev-Tra	Off
Image Filter	Off	Std-Dev-Time	Off
Distortion Corr.	Off	MIP-Sag	Off
		MIP-Cor	Off
Prescan Normalize Normalize	Off	MIP-Tra	Off
	Off	MIP-Time	Off
B1 filter	Off Off	Save original images	On
Raw filter	Off	1	
Elliptical filter	Off	Sequence	0.5
Geometry		Introduction	On
Multi-slice mode	Sequential	Asymmetric echo	Off
	_ = = = =	I (contracto	1
Series	Interleaved	Contrasts Bandwidth	260 Hz/Px

Flow comp.	No
RF pulse type	Normal
Gradient mode	Fast
RF spoiling	On
MB Number	2
FOV Shift	2
Distance22	72
	RF pulse type Gradient mode RF spoiling MB Number

\\USER\AMRIT\Liyong\20150821\fl_fq_mb6_venc8_res256_nav PAT: Off Voxel size: 0.8×0.8×4.0 mm Rel. SNR: 1.00 USER

USER: fl_fq_mb

TA: 0:41

1A. U.41 PA	AT. OII VOXEI SIZE. U.OX	0.6x4.0	USER. II_Iq_IIIb
		HEP	On
Properties	0"	HEA	On
Prio Recon	Off		
Before measurement After measurement		Positioning mode Table position	FIX H
Load to viewer	On	Table position	0 mm
Inline movie	Off	MSMA	S - C - T
Auto store images	On	Sagittal	R >> L
Load to stamp segments	Off	Coronal	A >> P
Load images to graphic	Off	Transversal	F >> H
segments		Coil Combine Mode	Adaptive Combine
Auto open inline display	Off	AutoAlign	
Start measurement without	On	Auto Coil Select	Default
further preparation		Ob.;	T
Wait for user to start	Off	Shim mode	Tune up Off
Start measurements	single	Adjust with body coil Confirm freq. adjustment	Off
Routine		Assume Silicone	Off
Slice group 1		? Ref. amplitude 1H	0.000 V
Slices	6	Adjustment Tolerance	Auto
Dist. factor	500 %	Adjust volume	71010
Position	L0.0 A13.1 H54.0	Position	Isocenter
Orientation	Transversal	Orientation	Transversal
Phase enc. dir.	A >> P	Rotation	0.00 deg
Rotation	0.00 deg	R >> L	350 mm
Phase oversampling	0 %	A >> P	263 mm
FoV read	192 mm	F >> H	350 mm
FoV phase	100.0 %	Di :	
Slice thickness	4.0 mm	Physio	Mana
TR	23.60 ms	1st Signal/Mode	None
TE	8.02 ms	Segments	1
Averages	1	Angio	
Concatenations	6	Flow mode	Single dir.
Filter	None	Encodings	1
Coil elements	HEA;HEP	Velocity enc.	8 cm/s
Contrast		Direction	Through plane
Flip angle	15 deg	Rephased images	On
		Magnitude images	On
Averaging mode	Short term	Phase images	On
Reconstruction	Magnitude	Subtract	Off
Measurements	1	Std-Dev-Sag	Off
Multiple series	Each measurement	Std-Dev-Cor	Off
Resolution		Std-Dev-Tra	Off
Base resolution	256	Std-Dev-Time	Off
Phase resolution	100 %	MIP-Sag	Off
Phase partial Fourier	Off	MIP-Cor	Off
Interpolation	Off	MIP-Tra	Off
PAT mode	None	MIP-Time	Off
Matrix Coil Mode	Auto (CP)	Save original images	On
Image Filter	Off	Sequence	
Distortion Corr.	Off	Introduction	On O#
Prescan Normalize	Off	Asymmetric echo	Off
Normalize	Off	Contrasts	1 260 H - /Dy
B1 filter	Off	Bandwidth	260 Hz/Px
Raw filter	Off	Flow comp.	No
Elliptical filter	Off	RF pulse type	Normal
Geometry		Gradient mode	Fast
Multi-slice mode	Sequential	RF spoiling	On
Series	Interleaved	MB Number	1
		FOV Shift	1
Special sat.	None	Distance22	32
System		Distallocal	<u>52</u>
Body	Off		
 ,		35/+	

\\USER\AMRIT\Liyong\20150821\fl_fq_mb6f2p2_venc8_res256 PAT: 2 Voxel size: 0.8×0.8×4.0 mm Rel. SNR: 1.00 USER:

TA: 1:54

USER: fl_fq_mb

Properties		Special sat.	None
Prio Recon	Off	System	
Before measurement		Body	Off
After measurement		HEP	On
Load to viewer	On	HEA	On
Inline movie	Off	Desitioning	FIV
Auto store images	On	Positioning mode	FIX
Load to stamp segments	Off	Table position	Н
Load images to graphic	Off	Table position	0 mm
segments		MSMA	S - C - T
Auto open inline display	Off	Sagittal	R >> L
Start measurement without	On	Coronal	A >> P
further preparation	.	Transversal	F >> H
Wait for user to start	Off	Coil Combine Mode	Adaptive Combine
Start measurements	single	AutoAlign	
	Sirigio	Auto Coil Select	Default
outine		—— Shim mode	Tuno un
Slice group 1			Tune up Off
Slices	1	Adjust with body coil	
Dist. factor	700 %	Confirm freq. adjustment	Off
Position	L0.0 A13.1 F6.0	Assume Silicone	Off
Orientation	Transversal	? Ref. amplitude 1H	0.000 V
Phase enc. dir.	A >> P	Adjustment Tolerance	Auto
Rotation	0.00 deg	Adjust volume	
Phase oversampling	0 %	Position	Isocenter
FoV read	192 mm	Orientation	Transversal
FoV phase	100.0 %	Rotation	0.00 deg
Slice thickness		R >> L	350 mm
	4.0 mm	A >> P	263 mm
TR	23.60 ms	F >> H	350 mm
TE A	8.02 ms	DI :	
Averages	1	Physio	
Concatenations	1	1st Signal/Mode	Pulse/Trigger
Filter	None	Average cycle	No Signal ms
Coil elements	HEA;HEP	Captured cycle	-not set-
ontrast		Acquisition window	800 ms
	15 deg	—— Trigger pulse	1
Flip angle	15 deg	Trigger delay	0 ms
Averaging mode	Short term	Segments	1
Reconstruction	Magnitude	Phases	33
Measurements	1		
Multiple series	Each measurement	Angio	
'		Flow mode	Single dir.
esolution		Encodings	1
Base resolution	256	Velocity enc.	8 cm/s
Phase resolution	100 %	Direction	Through plane
Phase partial Fourier	Off	Rephased images	On
Interpolation	Off	Magnitude images	On
		Phase images	On
PAT mode	GRAPPA		
Accel. factor PE	2	Subtract	Off
Ref. lines PE	24	Std-Dev-Sag	Off
Matrix Coil Mode	Auto (Triple)	Std-Dev-Cor	Off
Reference scan mode	Integrated	Std-Dev-Tra	Off
Image Filtor	Off	Std-Dev-Time	Off
Image Filter		MIP-Sag	Off
Distortion Corr.	Off	MIP-Cor	Off
Prescan Normalize	Off	MIP-Tra	Off
Normalize	Off	MIP-Time	Off
B1 filter	Off	Save original images	On
Raw filter	Off	1	3 11
Elliptical filter	Off	Sequence	
cometry		Introduction	On
eometry	Communication	Asymmetric echo	Off
Multi-slice mode	Sequential	Contrasts	1
Series	Interleaved	Contrasts	

Flow comp.	No
RF pulse type	Normal
Gradient mode	Fast
RF spoiling	On
MB Number	6
FOV Shift	2
Distance22	24

Voxel size: 0.8x0.8x4.0 mm Rel. SNR: 1.00

TA: 1:54

USER: fl_fq_mb

Properties		Special sat.	None
Prio Recon	Off	System	
Before measurement		Body	Off
After measurement		HEP	On
Load to viewer	On	HEA	On
Inline movie	Off	Desitioning	FIV
Auto store images	On	Positioning mode	FIX
Load to stamp segments	Off	Table position	Н
Load images to graphic	Off	Table position	0 mm
segments		MSMA	S - C - T
Auto open inline display	Off	Sagittal	R >> L
Start measurement without	On	Coronal	A >> P
further preparation	.	Transversal	F >> H
Wait for user to start	Off	Coil Combine Mode	Adaptive Combine
Start measurements	single	AutoAlign	
	Single	Auto Coil Select	Default
outine		—— Shim mode	Tune up
Slice group 1		Adjust with body coil	Off
Slices	1	Confirm freq. adjustment	Off
Dist. factor	700 %	Assume Silicone	Off
Position	L0.0 A13.1 H18.0	? Ref. amplitude 1H	0.000 V
Orientation	Transversal		
Phase enc. dir.	A >> P	Adjustment Tolerance	Auto
Rotation	0.00 deg	Adjust volume	la a a a uta u
Phase oversampling	0 %	Position	Isocenter
FoV read	192 mm	Orientation	Transversal
FoV phase	100.0 %	Rotation	0.00 deg
Slice thickness	4.0 mm	R >> L	350 mm
TR	23.60 ms	A >> P	263 mm
TE	8.02 ms	F >> H	350 mm
Averages	1	Dhysis	
	1	Physio	D 1 /T:
Concatenations	•	1st Signal/Mode	Pulse/Trigger
Filter	None	Average cycle	No Signal ms
Coil elements	HEA;HEP	Captured cycle	-not set-
ontrast		Acquisition window	800 ms
Flip angle	15 deg	Trigger pulse	1
·		Trigger delay	0 ms
Averaging mode	Short term	Segments	1
Reconstruction	Magnitude	Phases	33
Measurements	1	Angia	
Multiple series	Each measurement	Angio Flow mode	Cin alo dia
			Single dir.
esolution		Encodings	1
Base resolution	256	Velocity enc.	8 cm/s
Phase resolution	100 %	Direction	Through plane
Phase partial Fourier	Off	Rephased images	On
Interpolation	Off	Magnitude images	On
PAT mode	GRAPPA	Phase images	On
Accel. factor PE		Subtract	Off
	2		
Ref. lines PE	24	Std-Dev-Sag	Off
Matrix Coil Mode	Auto (Triple)	Std-Dev-Cor	Off
Reference scan mode	Integrated	Std-Dev-Tra	Off
Image Filter	Off	Std-Dev-Time	Off
Distortion Corr.	Off	MIP-Sag	Off
Prescan Normalize	Off	MIP-Cor	Off
Normalize	Off	MIP-Tra	Off
	_	MIP-Time	Off
B1 filter	Off	Save original images	On
Raw filter	Off		
Elliptical filter	Off	Sequence	
eometry		Introduction	On
Multi-slice mode	Sequential	Asymmetric echo	Off
Series	Interleaved	Contrasts Bandwidth	1 260 Hz/Px

Flow comp.	No
RF pulse type	Normal
Gradient mode	Fast
RF spoiling	On
MB Number	1
FOV Shift	1
Distance22	32

Voxel size: 0.8×0.8×4.0 mm Rel. SNR: 1.00

USER: fl_fq_mb

TA: 1:54

roperties		Special sat.	None
Prio Recon	Off	System	
Before measurement		Body	Off
After measurement		HEP	On
Load to viewer	On	HEA	On
Inline movie	Off	Desitioning	FIV
Auto store images	On	Positioning mode	FIX
Load to stamp segments	Off	Table position	Н
Load images to graphic	Off	Table position	0 mm
segments		MSMA	S - C - T
Auto open inline display	Off	Sagittal	R >> L
Start measurement without	On	Coronal	A >> P
further preparation	.	Transversal	F >> H
Wait for user to start	Off	Coil Combine Mode	Adaptive Combine
Start measurements	single	AutoAlign	
	Single	Auto Coil Select	Default
outine		—— Shim mode	Tuno un
Slice group 1			Tune up Off
Slices	1	Adjust with body coil	Off
Dist. factor	700 %	Confirm freq. adjustment Assume Silicone	Off
Position	L0.0 A13.1 H90.0		
Orientation	Transversal	? Ref. amplitude 1H	0.000 V
Phase enc. dir.	A >> P	Adjustment Tolerance	Auto
Rotation	0.00 deg	Adjust volume	
Phase oversampling	0 %	Position	Isocenter
FoV read	192 mm	Orientation	Transversal
FoV phase	100.0 %	Rotation	0.00 deg
Slice thickness	4.0 mm	R >> L	350 mm
TR	23.60 ms	A >> P	263 mm
TE	8.02 ms	F >> H	350 mm
Averages	1	Physio	
Concatenations	1	1st Signal/Mode	Dulco/Triggor
Filter	None		Pulse/Trigger
Coil elements	HEA;HEP	Average cycle	No Signal ms
Con elements	пен,пен	Captured cycle	-not set-
ontrast		Acquisition window	800 ms
Flip angle	15 deg	Trigger pulse	1
		Trigger delay	0 ms
Averaging mode	Short term	Segments	1
Reconstruction	Magnitude	Phases	33
Measurements	1	Angio	
Multiple series	Each measurement	Flow mode	Single dir.
esolution		Encodings	omgle dir.
Base resolution	256	Velocity enc.	8 cm/s
Phase resolution	100 %	Direction	
	Off	Rephased images	Through plane
Phase partial Fourier	_		On On
Interpolation	Off	Magnitude images	On
PAT mode	GRAPPA	Phase images	On
Accel. factor PE	2	Subtract	Off
Ref. lines PE	_ 24	Std-Dev-Sag	Off
Matrix Coil Mode	Auto (Triple)	Std-Dev-Cor	Off
Reference scan mode	Integrated	Std-Dev-Tra	Off
		Std-Dev-Time	Off
Image Filter	Off	MIP-Sag	Off
Distortion Corr.	Off	MIP-Cor	Off
Prescan Normalize	Off	MIP-Cor MIP-Tra	Off
Normalize	Off		
B1 filter	Off	MIP-Time	Off
Raw filter	Off	Save original images	On
Elliptical filter	Off	Sequence	
·		Introduction	On
eometry		Asymmetric echo	Off
Multi-slice mode	Sequential		
Series	Interleaved	Contrasts	1

Flow comp.	No
RF pulse type	Normal
Gradient mode	Fast
RF spoiling	On
MB Number	1
FOV Shift	1
Distance22	32

\\USER\AMRIT\Liyong\20150821\localizer

SIEMENS: gre

PAT: Off Voxel size: 1.1×1.0×7.0 mm Rel. SNR: 1.00

TA: 0:13

1A. 0.13 P.	A1. OII VOXel SIZE. 1.1X1.03	C7.0 IIIII Rei. SINK. 1.00	SIEMENS. gre
		Phase resolution	90 %
Properties		Phase resolution	90 % Off
Prio Recon	Off	Phase partial Fourier Interpolation	
Before measurement		Interpolation	On
After measurement		PAT mode	None
Load to viewer	On	Matrix Coil Mode	Auto (CP)
Inline movie	Off		
Auto store images	On	Image Filter	Off
Load to stamp segments	Off	Distortion Corr.	Off
Load images to graphic	Off	Unfiltered images	Off
segments		Prescan Normalize	On
Auto open inline display	Off	Normalize	Off
Start measurement without	Off	B1 filter	Off
further preparation	Oli	Raw filter	Off
Wait for user to start	Off	Elliptical filter	On
Start measurements	single	Mode	Inplane
Start measurements	Sirigie	Coometry	
Routine		Geometry	Cognestial
Slice group 1		- Multi-slice mode	Sequential
Slices	1	Series	Interleaved
Dist. factor	20 %	Saturation mode	Standard
Position	Isocenter	Special sat.	None
Orientation	Sagittal	1	
Phase enc. dir.	A >> P	Tim CT mode	Off
Rotation	0.00 deg		5
Slice group 2		System	
Slices	1	Body	Off
Dist. factor	20 %	HEP	On
Position	Isocenter	HEA	On
Orientation	Transversal		
Phase enc. dir.	A >> P	Positioning mode	REF
Rotation	0.00 deg	Table position	H
Slice group 3	0.00 deg	Table position	0 mm
Slices	1	MSMA	S-C-T
Dist. factor	20 %	Sagittal	R >> L
Position	Isocenter	Coronal	A >> P
Orientation	Coronal	Transversal	F >> H
Phase enc. dir.	R >> L	Save uncombined	Off
Rotation		Coil Combine Mode	Adaptive Combine
	0.00 deg	AutoAlign	
Phase oversampling	0 %	Auto Coil Select	Default
FoV read	250 mm	Shim modo	Tuno un
FoV phase	100.0 %	Shim mode	Tune up Off
Slice thickness	7.0 mm	Adjust with body coil	Off
TR	8.6 ms	Confirm freq. adjustment	
TE .	4.00 ms	Assume Silicone	Off
Averages	2	? Ref. amplitude 1H	0.000 V
Concatenations	3	Adjustment Tolerance	Auto
Filter	Prescan Normalize, Elliptical	Adjust volume	lacconton
	filter	Position	Isocenter
Coil elements	HEA;HEP	Orientation	Transversal
Contrast		Rotation	0.00 deg
TD	0 ms	_ R >> L	350 mm
MTC	Off	A >> P	263 mm
Magn. preparation	None	F >> H	350 mm
Flip angle		Physio	
. •	20 deg	1st Signal/Mode	None
Fat suppr.	None	Segments	1
Water suppr.	None		I
Averaging mode	Short term	Dark blood	Off
Reconstruction	Magnitude	Poor control	Off
Measurements	1	Resp. control	Off
Multiple series	Each measurement	Inline	
•		Subtract	Off
Resolution	050	Liver registration	Off
Base resolution	256	Std-Dev-Sag	Off
		1	-

Std-Dev-Cor	Off
Std-Dev-Tra	Off
Std-Dev-Time	Off
MIP-Sag	Off
MIP-Cor	Off
MIP-Tra	Off
MIP-Time	Off
Save original images	On
Wash - In	Off
Wash - Out	Off
TTP	Off
PEI	Off
MIP - time	Off

Sequence

Introduction	On
Dimension	2D
Phase stabilisation	Off
Asymmetric echo	Allowed
Contrasts	1
Bandwidth	320 Hz/Px
Flow comp.	No
Allowed delay	0 s
RF pulse type	Normal
Gradient mode	Normal
Excitation	Slice-sel.
RF spoiling	On

 $\verb|\USER\AMRIT\Liyong\20150821\ep2d_venc5_fast_TP_mb3| \\$

USER: ep2d_venc_ms_sbmb_SAT

Voxel size: 1.5×1.5×5.0 mm Rel. SNR: 1.00

TA: 41:26

PAT: 2

Properties		Sat. region 1	
Prio Recon	Off	Thickness	50 mm
Before measurement		Position	L0.0 A93.4 H17.0
After measurement		Orientation	Coronal
Load to viewer	On	Sat. region 2	
Inline movie	Off	Thickness	50 mm
Auto store images	On	Position	L0.0 P62.2 H17.0
Load to stamp segments	Off	Orientation	Coronal
Load images to graphic	Off	Special sat.	None
	Oli	Special Sal.	None
segments	04	System	
Auto open inline display	Off	Body	Off
Start measurement without	On	HEP	On
further preparation	0.4	HEA	On
Wait for user to start	Off		
Start measurements	single	Positioning mode	REF
Routine		Table position	Н
		Table position	0 mm
Slice group 1	•	MSMA	S-C-T
Slices	3	Sagittal	R >> L
Dist. factor	700 %	Coronal	A >> P
Position	L0.0 A14.8 H17.0	Transversal	F >> H
Orientation	Transversal	Coil Combine Mode	
Phase enc. dir.	A >> P		Sum of Squares
Rotation	0.00 deg	AutoAlign	 D ()
Phase oversampling	0 %	Auto Coil Select	Default
FoV read	192 mm	Shim mode	Standard
FoV phase	100.0 %	Adjust with body coil	Off
Slice thickness	5.0 mm	Confirm freq. adjustment	Off
TR	5920 ms	Assume Silicone	Off
TE	38.0 ms		
Averages	1	? Ref. amplitude 1H	0.000 V
		Adjustment Tolerance	Auto
Concatenations	1 Name	Adjust volume	
Filter	None	Position	L0.0 A14.8 H17.0
Coil elements	HEA;HEP	Orientation	Transversal
Contrast		Rotation	0.00 deg
MTC	Off	—— R >> L	192 mm
Flip angle	25 deg	A >> P	192 mm
	Fat sat.	F >> H	85 mm
Fat suppr.	rai Sai. 	Dharain	
Averaging mode	Long term	Physio	
Reconstruction	Magnitude	1st Signal/Mode	None
Measurements	420	Angio	
Delay in TR	0 ms	Flow mode	Single dir.
Multiple series	Off	Encodings	1
Multiple Series	Oli		•
Resolution		Velocity enc.	5 cm/s
Base resolution	128	—— Direction	Through plane
Phase resolution	100 %	Magnitude sum	Off
Phase partial Fourier	6/8	Sequence	
Interpolation	Off	Introduction	Off
		Bandwidth	1776 Hz/Px
PAT mode	GRAPPA		
Accel. factor PE	2	Free echo spacing	Off
Ref. lines PE	24	Echo spacing	0.94 ms
Matrix Coil Mode	Auto (Triple)	EPI factor	128
Reference scan mode	Separate	RF pulse type	Normal
		Gradient mode	Fast
Distortion Corr.	Off		On
Prescan Normalize	Off	RF spoiling	OII
Raw filter	Off	RF90 duration	5120
Elliptical filter	Off	MB Number	3
Hamming	Off	DummyScan Number	5
-		FOV Shift Number	3
Geometry		—— Shift K0 Center	1
Multi-slice mode	Interleaved	Every Other Slice	1
Series	Ascending		

SER Number	1
Venc Repetition	400
Spoil factor	5
Skew Direction	1
DualBand Sat	0
FOV Dir	0
Venc Type(0off,1+-,20+,3on,4	4 1
00++)	

 $\verb|\USER\AMRIT\Liyong\20150821\ep2d_venc5_slow_TP_mb3|$

USER: ep2d_venc_ms_sbmb_SAT

Voxel size: 1.5×1.5×5.0 mm Rel. SNR: 1.00

TA: 41:26

PAT: 2

-		<u>-</u>	
Properties		Sat. region 1	
Prio Recon	Off	Thickness	50 mm
Before measurement		Position	L0.0 A93.4 H17.0
After measurement		Orientation	Coronal
Load to viewer	On	Sat. region 2	
Inline movie	Off	Thickness	50 mm
Auto store images	On	Position	L0.0 P62.2 H17.0
Load to stamp segments	Off	Orientation	Coronal
Load images to graphic	Off	Special sat.	None
	Oli	Special Sat.	None
segments	0#	System	
Auto open inline display	Off	Body	Off
Start measurement without	On	HEP	On
further preparation	0.4	HEA	On
Wait for user to start	Off		
Start measurements	single	Positioning mode	REF
Routine		Table position	Н
		Table position	0 mm
Slice group 1	•	MSMA	S - C - T
Slices	3	Sagittal	R >> L
Dist. factor	700 %	Coronal	A >> P
Position	L0.0 A14.8 H17.0	Transversal	F >> H
Orientation	Transversal	Coil Combine Mode	
Phase enc. dir.	A >> P		Sum of Squares
Rotation	0.00 deg	AutoAlign	 D ()
Phase oversampling	0 %	Auto Coil Select	Default
FoV read	192 mm	Shim mode	Standard
FoV phase	100.0 %	Adjust with body coil	Off
Slice thickness	5.0 mm	Confirm freq. adjustment	Off
TR	5920 ms	Assume Silicone	Off
TE	38.0 ms		0.000 V
Averages	1	? Ref. amplitude 1H	
	1	Adjustment Tolerance	Auto
Concatenations		Adjust volume	
Filter	None	Position	L0.0 A14.8 H17.0
Coil elements	HEA;HEP	Orientation	Transversal
Contrast		Rotation	0.00 deg
MTC	Off	—— R >> L	192 mm
Flip angle	25 deg	A >> P	192 mm
	Fat sat.	F >> H	85 mm
Fat suppr.	rai sai. 	Dharia	
Averaging mode	Long term	Physio	
Reconstruction	Magnitude	1st Signal/Mode	None
Measurements	420	Angio	
Delay in TR	0 ms	Flow mode	Single dir.
Multiple series	Off	Encodings	1
Multiple Series	OII		•
Resolution		Velocity enc.	5 cm/s
Base resolution	128	—— Direction	Through plane
Phase resolution	100 %	Magnitude sum	Off
Phase partial Fourier	6/8	Sequence	
Interpolation	Off	Introduction	Off
		Bandwidth	1776 Hz/Px
PAT mode	GRAPPA		
Accel. factor PE	2	Free echo spacing	Off
Ref. lines PE	24	Echo spacing	0.94 ms
Matrix Coil Mode	Auto (Triple)	EPI factor	128
Reference scan mode	Separate	RF pulse type	Normal
		Gradient mode	Fast
Distortion Corr.	Off	RF spoiling	On
Prescan Normalize	Off	ixi spoiling	
Raw filter	Off	RF90 duration	5120
Elliptical filter	Off	MB Number	3
Hamming	Off	DummyScan Number	5
_		FOV Shift Number	3
Geometry		Shift K0 Center	1
Multi-slice mode	Interleaved	Every Other Slice	1
Series	Ascending		

SER Number	1
Venc Repetition	400
Spoil factor	5
Skew Direction	1
DualBand Sat	0
FOV Dir	0
Venc Type(0off,1+-,20+,3on	,4 1
00++)	

USER: ep2d_venc_ms_sbmb_SAT

Voxel size: 1.5×1.5×5.0 mm Rel. SNR: 1.00

TA: 40:27

PAT: 2

-			
Properties		Sat. region 1	
Prio Recon	Off	Thickness	50 mm
Before measurement		Position	L0.0 A93.4 H17.0
After measurement		Orientation	Coronal
Load to viewer	On	Sat. region 2	
Inline movie	Off	Thickness	50 mm
Auto store images	On	Position	L0.0 P62.2 H17.0
Load to stamp segments	Off	Orientation	Coronal
Load images to graphic	Off	Special sat.	None
segments	Oli	opecial sat.	THORE
Auto open inline display	Off	System	
Start measurement without	On	Body	Off
	On	HEP	On
further preparation	04	HEA	On
Wait for user to start	Off		
Start measurements	single	Positioning mode	REF
Routine		Table position	Н
Slice group 1		—— Table position	0 mm
Slices	4	MSMA	S - C - T
	1	Sagittal	R >> L
Dist. factor	700 %	Coronal	A >> P
Position	L0.0 A14.8 H17.0	Transversal	F >> H
Orientation	Transversal	Coil Combine Mode	Sum of Squares
Phase enc. dir.	A >> P	AutoAlign	
Rotation	0.00 deg	Auto Coil Select	Default
Phase oversampling	0 %	Auto Coli Gelect	
FoV read	192 mm	Shim mode	Standard
FoV phase	100.0 %	Adjust with body coil	Off
Slice thickness	5.0 mm	Confirm freq. adjustment	Off
TR	5920 ms	Assume Silicone	Off
TE	38.0 ms	? Ref. amplitude 1H	0.000 V
Averages	1	Adjustment Tolerance	Auto
Concatenations	1	Adjust volume	Auto
Filter	None	Position	L0.0 A14.8 H17.0
Coil elements	HEA;HEP		
Con elements	HEA,HEF	Orientation	Transversal
Contrast		Rotation	0.00 deg
MTC	Off		192 mm
Flip angle	25 deg	A >> P	192 mm
Fat suppr.	Fat sat.	F >> H	5 mm
		····· Physio	
Averaging mode	Long term	1st Signal/Mode	None
Reconstruction	Magnitude	13t Signal/Wode	None
Measurements	420	Angio	
Delay in TR	0 ms	Flow mode	Single dir.
Multiple series	Off	Encodings	1
Decelution		Velocity enc.	5 cm/s
Resolution	100	Direction	Through plane
Base resolution	128	Magnitude sum	Off
Phase resolution	100 %	1	0.11
Phase partial Fourier	6/8	Sequence	
Interpolation	Off	Introduction	Off
DATI-	OD 4 DD 4	Bandwidth	1776 Hz/Px
PAT mode	GRAPPA	Free echo spacing	Off
Accel. factor PE	2	Echo spacing	0.94 ms
Ref. lines PE	24		
Matrix Coil Mode	Auto (Triple)	EPI factor	128
Reference scan mode	Separate	RF pulse type	Normal
Distortion Corr	Off	Gradient mode	Fast
Distortion Corr.	Off	RF spoiling	On
Prescan Normalize	Off Off		-
Raw filter	Off	RF90 duration	5120
Elliptical filter	Off	MB Number	1
Hamming	Off	DummyScan Number	5
Geometry		FOV Shift Number	1
Multi-slice mode	Interleaved	—— Shift K0 Center	1
Series	Ascending	Every Other Slice	1

1
400
5
1
0
0
- 1

\\USER\AMRIT\Liyong\20150821\localizer

TA: 0:13 PAT: Off Voxel size: 1.1×1.0×7.0 mm Rel. SNR: 1.00 SIEMENS: gre			
Droportion		Phase resolution	90 %
Properties	Off	Phase partial Fourier	Off
Prio Recon	Oli	Interpolation	On
Before measurement After measurement		PAT mode	None
Load to viewer	On	Matrix Coil Mode	Auto (CP)
Inline movie	Off		Adio (Ci)
Auto store images	On	Image Filter	Off
Load to stamp segments	Off	Distortion Corr.	Off
Load images to graphic	Off	Unfiltered images	Off
segments		Prescan Normalize	On
Auto open inline display	Off	Normalize	Off
Start measurement without	Off	B1 filter	Off
further preparation		Raw filter	Off
Wait for user to start	Off	Elliptical filter	On
Start measurements	single	Mode	Inplane
Routine		Geometry	
		- Multi-slice mode	Sequential
Slice group 1 Slices	1	Series	Interleaved
Dist. factor	20 %	Saturation mode	Standard
Position	Isocenter	Special sat.	None
Orientation	Sagittal		
Phase enc. dir.	A >> P	Tim CT mode	
Rotation	0.00 deg	Tim C1 mode	Off
Slice group 2	0.00 dog	System	
Slices	1	Body	Off
Dist. factor	20 %	HEP	On
Position	Isocenter	HEA	On
Orientation	Transversal	Positioning mode	REF
Phase enc. dir.	A >> P	Table position	H
Rotation	0.00 deg	Table position	0 mm
Slice group 3	-	MSMA	S - C - T
Slices	1	Sagittal	R >> L
Dist. factor	20 %	Coronal	A >> P
Position	Isocenter	Transversal	F >> H
Orientation	Coronal	Save uncombined	Off
Phase enc. dir.	R >> L	Coil Combine Mode	Adaptive Combine
Rotation	0.00 deg	AutoAlign	[']
Phase oversampling	0 %	Auto Coil Select	Default
FoV read	250 mm	Oh: d-	T
FoV phase	100.0 %	Shim mode Adjust with body coil	Tune up Off
Slice thickness	7.0 mm	Confirm freq. adjustment	Off
TR	8.6 ms	Assume Silicone	Off
TE	4.00 ms	? Ref. amplitude 1H	0.000 V
Averages Concatenations	2 3	Adjustment Tolerance	Auto
Filter	o Prescan Normalize, Elliptical	Adjust volume	, 1010
i iitei	filter	Position	Isocenter
Coil elements	HEA;HEP	Orientation	Transversal
ı		Rotation	0.00 deg
Contrast		R >> L	350 mm
TD	0 ms	A >> P	263 mm
MTC	Off	F >> H	350 mm
Magn. preparation	None	Physic	
Flip angle	20 deg	Physio	None
Fat suppr.	None	1st Signal/Mode Segments	None 1
Water suppr.	None	Jeginenis	I
Averaging mode	Short term	Dark blood	Off
Reconstruction	Magnitude	Resp. control	Off
Measurements	1		Oil
Multiple series	Each measurement	Inline	
Resolution		Subtract	Off
Base resolution	256	Liver registration	Off
บิดิวิธิ โธวิบิโนแบบ	200	Std-Dev-Sag	Off

Std-Dev-Cor Std-Dev-Tra Std-Dev-Time MIP-Sag MIP-Cor MIP-Tra MIP-Time Save original images	Off Off Off Off Off Off Off Off Off
Wash - In	Off
Wash - Out	Off
TTP	Off
PEI	Off
MIP - time	Off

Sequence

Introduction	On
Dimension	2D
Phase stabilisation	Off
Asymmetric echo	Allowed
Contrasts	1
Bandwidth	320 Hz/Px
Flow comp.	No
Allowed delay	0 s
RF pulse type	Normal
Gradient mode	Normal
Excitation	Slice-sel.
RF spoiling	On
. •	

 $\verb|\USER\AMRIT\Liyong\20150821\gre_david|$

TA: 0:45 PAT: 2 Voxel size: 0.9×0.8×4.0 mm Rel. SNR: 1.00 SIEMENS: gre			
Properties		B1 filter	Off
	0"	- Raw filter	Off
Prio Recon	Off	Elliptical filter	On
Before measurement		Mode	Inplane
After measurement Load to viewer	On	Geometry	
	Off	Multi-slice mode	Cognestial
Inline movie		Series	Sequential
Auto store images	On O#	Series	Interleaved
Load to stamp segments	Off	Saturation mode	Standard
Load images to graphic	Off	Special sat.	None
segments	0"		
Auto open inline display	Off	Tim CT mode	Off
Start measurement without	On		3
further preparation	0"	System	
Wait for user to start	Off	Body	Off
Start measurements	single	HEP	On
Routine		HEA	On
Slice group 1		Docition in a read-	DEE
Slices	40	Positioning mode	REF
Dist. factor	0 %	Table position	Н
Position	L1.8 A33.8 H37.3	Table position	0 mm
Orientation		MSMA	S-C-T
Phase enc. dir.	Transversal A >> P	Sagittal	R >> L
		Coronal	A >> P
Rotation	0.00 deg	Transversal	F >> H
Phase oversampling	0 %	Save uncombined	Off
FoV read	200 mm	Coil Combine Mode	Adaptive Combine
FoV phase	100.0 %	AutoAlign	
Slice thickness	4.0 mm	Auto Coil Select	Default
TR	8.6 ms	Obias as a da	T
TE	4.00 ms	Shim mode	Tune up
Averages	1	Adjust with body coil	Off
Concatenations	40	Confirm freq. adjustment	Off
Filter	Prescan Normalize, Elliptical	Assume Silicone	Off
	filter	? Ref. amplitude 1H	0.000 V
Coil elements	HEA;HEP	Adjustment Tolerance	Auto
Combinat		Adjust volume	
Contrast	0	_ Position	Isocenter
TD	0 ms	Orientation	Transversal
MTC	Off	Rotation	0.00 deg
Magn. preparation	None	R >> L	350 mm
Flip angle	20 deg	A >> P	263 mm
Fat suppr.	None	F >> H	350 mm
Water suppr.	None	Physic	
Averaging mode	Short term	Physio	None
Reconstruction	Magnitude	1st Signal/Mode	None 1
Measurements	1	Segments	1
Multiple series	Each measurement	Dark blood	Off
Multiple Series	Lacifileasarement		
Resolution		Resp. control	Off
Base resolution	256	_ Inline	
Phase resolution	90 %	Subtract	Off
Phase partial Fourier	Off	Liver registration	Off
Interpolation	On	Std-Dev-Sag	Off
	OD 4 DD 4	Std-Dev-Sag Std-Dev-Cor	Off
PAT mode	GRAPPA	Std-Dev-Tra	Off
Accel. factor PE	2	Std-Dev-Tra Std-Dev-Time	Off
Ref. lines PE	24		_
Matrix Coil Mode	Auto (Triple)	MIP-Sag	Off Off
Reference scan mode	Integrated	MIP-Cor	Off
Image Filter	Off	MIP-Tra	Off
		MIP-Time	Off
Distortion Corr.	Off	Save original images	On
Unfiltered images	Off	Wash - In	Off
Prescan Normalize	On O#	Wash - Out	Off
Normalize	Off	Wash - Out	JII

	TTP	Off
	PEI	Off
	MIP - time	Off
	Sequence	
ſ	Introduction	On
	Dimension	2D
	Phase stabilisation	Off
	Asymmetric echo	Allowed
	Contrasts	1
	Bandwidth	320 Hz/Px
	Flow comp.	No
	Allowed delay	0 s
	RF pulse type	Normal
	Gradient mode	Normal
	Excitation	Slice-sel.
	RF spoiling	On
ı	. •	

\\USER\AMRIT\Liyong\20150821\fl_fq_mb2_venc90_res256_nav PAT: Off Voxel size: 0.8×0.8×4.0 mm Rel. SNR: 1.00 USER:

TA: 0:15

USER: fl_fq_mb

			_ . _
5		HEP	On
Properties		HEA	On
Prio Recon	Off		FIV
Before measurement		Positioning mode	FIX
After measurement	0.5	Table position	H
Load to viewer	On Off	Table position	0 mm
Inline movie	Off	MSMA	S-C-T
Auto store images	On	Sagittal	R >> L
Load to stamp segments	Off	Coronal	A >> P
Load images to graphic	Off	Transversal	F >> H
segments	0"	Coil Combine Mode	Adaptive Combine
Auto open inline display	Off	AutoAlign	 D ()
Start measurement without	On	Auto Coil Select	Default
further preparation	0"	Shim mode	Tune up
Wait for user to start	Off	Adjust with body coil	Off
Start measurements	single	Confirm freq. adjustment	Off
Routine		Assume Silicone	Off
Slice group 1		? Ref. amplitude 1H	0.000 V
Slices	2	Adjustment Tolerance	Auto
Dist. factor	1700 %	Adjust volume	Auto
Position	L0.0 A41.5 H26.2	Position	Isocenter
Orientation	Transversal	Orientation	Transversal
	A >> P		0.00 deg
Phase enc. dir.		Rotation	•
Rotation	0.00 deg	R >> L	350 mm
Phase oversampling	0 %	A >> P	263 mm
FoV read	192 mm	F >> H	350 mm
FoV phase	100.0 %	Physio	
Slice thickness	4.0 mm	1st Signal/Mode	None
TR	23.60 ms	Segments	1
TE	8.02 ms	Cogmonic	•
Averages	1	Angio	
Concatenations	2	Flow mode	Single dir.
Filter	None	Encodings	1
Coil elements	HEA;HEP	Velocity enc.	90 cm/s
Contrast		Direction	Through plane
Flip angle	15 deg	Rephased images	On
		Magnitude images	On
Averaging mode	Short term	Phase images	On
Reconstruction	Magnitude	0	O#
Measurements	1	Subtract	Off
Multiple series	Each measurement	Std-Dev-Sag	Off
I -		Std-Dev-Cor	Off
Resolution		Std-Dev-Tra	Off
Base resolution	256	Std-Dev-Time	Off
Phase resolution	100 %	MIP-Sag	Off
Phase partial Fourier	Off	MIP-Cor	Off
Interpolation	Off	MIP-Tra	Off
PAT mode	None	···· MIP-Time	Off
Matrix Coil Mode	Triple	Save original images	On
		Sequence	
Image Filter	Off	Introduction	On
Distortion Corr.	Off	Asymmetric echo	Off
Prescan Normalize	Off		1
Normalize	Off	Contrasts Bandwidth	260 Hz/Px
B1 filter	Off		
Raw filter	Off	Flow comp.	No
Elliptical filter	Off	RF pulse type	Normal
		Gradient mode	Fast
Geometry		RF spoiling	On
Multi-slice mode	Sequential		
Series	Interleaved	MB Number	1
Special sat.	None	FOV Shift	1
I -	. 10.10	Distance22	32
System			
Body	Off	_	
		54/+	

TA: 2:08

USER: fl_fq_mb

Properties		Special sat.	None
Prio Recon	Off	System	
Before measurement		Body	Off
After measurement		HEP	On
Load to viewer	On	HEA	On
Inline movie	Off	Decitioning mode	FIV
Auto store images	On	Positioning mode	FIX
Load to stamp segments	Off	Table position	Н
Load images to graphic	Off	Table position	0 mm
segments		MSMA	S - C - T
Auto open inline display	Off	Sagittal	R >> L
Start measurement without	On	Coronal	A >> P
further preparation	.	Transversal	F >> H
Wait for user to start	Off	Coil Combine Mode	Adaptive Combine
Start measurements	single	AutoAlign	
	Sirigio	Auto Coil Select	Default
outine		—— Shim mode	Tune un
Slice group 1			Tune up
Slices	1	Adjust with body coil	Off
Dist. factor	700 %	Confirm freq. adjustment	Off
Position	L0.0 A41.5 F9.8	Assume Silicone	Off
Orientation	Transversal	? Ref. amplitude 1H	0.000 V
Phase enc. dir.	A >> P	Adjustment Tolerance	Auto
Rotation	0.00 deg	Adjust volume	
Phase oversampling	0 %	Position	Isocenter
FoV read	192 mm	Orientation	Transversal
FoV phase	100.0 %	Rotation	0.00 deg
Slice thickness		R >> L	350 mm
	4.0 mm	A >> P	263 mm
TR	23.60 ms	F >> H	350 mm
TE A	8.02 ms	n i	
Averages	1	Physio	
Concatenations	1	1st Signal/Mode	Pulse/Trigger
Filter	None	Average cycle	No Signal ms
Coil elements	HEA;HEP	Captured cycle	-not set-
ontrast		Acquisition window	900 ms
Flip angle	15 deg	—— Trigger pulse	1
riip arigie	15 deg	Trigger delay	0 ms
Averaging mode	Short term	Segments	1
Reconstruction	Magnitude	Phases	38
Measurements	1		
Multiple series	Each measurement	Angio	
		Flow mode	Single dir.
esolution		Encodings	1
Base resolution	256	Velocity enc.	90 cm/s
Phase resolution	100 %	Direction	Through plane
Phase partial Fourier	Off	Rephased images	On
Interpolation	Off	Magnitude images	On
DATde	CDADDA	Phase images	On
PAT mode	GRAPPA	O de transit	O#
Accel. factor PE	2	Subtract	Off
Ref. lines PE	24	Std-Dev-Sag	Off
Matrix Coil Mode	Triple	Std-Dev-Cor	Off
Reference scan mode	Integrated	Std-Dev-Tra	Off
Image Filter	Off	Std-Dev-Time	Off
Image Filter		MIP-Sag	Off
Distortion Corr.	Off Off	MIP-Cor	Off
Prescan Normalize	Off	MIP-Tra	Off
Normalize	Off	MIP-Time	Off
B1 filter	Off	Save original images	On
Raw filter	Off		
Elliptical filter	Off	Sequence	
eometry		Introduction	On
eometry	Coguantial	Asymmetric echo	Off
Multi-slice mode	Sequential	Contrasts	1
Series	Interleaved	Contracto	•

Flow comp.	No
RF pulse type Gradient mode RF spoiling	Normal Fast On
MB Number FOV Shift Distance22	2 2 72

\\USER\AMRIT\Liyong\20150821\fl_fq_mb1f1p2_venc90_res256_bottom

Voxel size: 0.8×0.8×4.0 mm Rel. SNR: 1.00

USER: fl_fq_mb

TA: 2:08

Properties		Special sat.	None
Prio Recon	Off	System	
Before measurement		Body	Off
After measurement		HEP	On
Load to viewer	On	HEA	On
Inline movie	Off		
Auto store images	On	Positioning mode	FIX
Load to stamp segments	Off	Table position	Н
Load images to graphic	Off	Table position	0 mm
segments	.	MSMA	S - C - T
Auto open inline display	Off	Sagittal	R >> L
Start measurement without	On	Coronal	A >> P
further preparation	Oli	Transversal	F >> H
Wait for user to start	Off	Coil Combine Mode	Adaptive Combine
Start measurements		AutoAlign	
Start measurements	single	Auto Coil Select	Default
outine		Shim mode	Tuno un
Slice group 1		Shim mode	Tune up
Slices	1	Adjust with body coil	Off Off
Dist. factor	700 %	Confirm freq. adjustment	Off Off
Position	L0.0 A41.5 F9.8	Assume Silicone	Off
Orientation	Transversal	? Ref. amplitude 1H	0.000 V
Phase enc. dir.	A >> P	Adjustment Tolerance	Auto
Rotation	0.00 deg	Adjust volume	
Phase oversampling	0 %	Position	Isocenter
FoV read	192 mm	Orientation	Transversal
FoV phase	100.0 %	Rotation	0.00 deg
Slice thickness	4.0 mm	R >> L	350 mm
TR	23.60 ms	A >> P	263 mm
TE	8.02 ms	F >> H	350 mm
Averages	1	Physio	
Concatenations	1	1st Signal/Mode	Pulse/Trigger
Filter	None		
Coil elements	HEA;HEP	Average cycle	No Signal ms
Coll elements	I ILA,I ILI	Captured cycle	-not set-
ontrast		Acquisition window	900 ms
Flip angle	15 deg	Trigger pulse	1
Λ	Chart tarms	Trigger delay	0 ms
Averaging mode	Short term	Segments	1
Reconstruction	Magnitude	Phases	38
Measurements	1 	Angio	
Multiple series	Each measurement	Flow mode	Single dir.
esolution		Encodings	1
Base resolution	256	Velocity enc.	90 cm/s
Phase resolution	100 %	Direction	Through plane
Phase partial Fourier	Off	Rephased images	On
Interpolation	Off	Magnitude images	On
		Phase images	On
PAT mode	GRAPPA		
Accel. factor PE	2	Subtract	Off
Ref. lines PE	24	Std-Dev-Sag	Off
Matrix Coil Mode	Triple	Std-Dev-Cor	Off
Reference scan mode	Integrated	Std-Dev-Tra	Off
las and Eth.		Std-Dev-Time	Off
Image Filter	Off	MIP-Sag	Off
Distortion Corr.	Off	MIP-Cor	Off
Prescan Normalize	Off	MIP-Tra	Off
Normalize	Off	MIP-Time	Off
B1 filter	Off	Save original images	On
Raw filter	Off	1	
Elliptical filter	Off	Sequence	
eometry		Introduction	On
eometry Multi alice made	Cognontial	Asymmetric echo	Off
Multi-slice mode Series	Sequential Interleaved	Contrasts	1
			260 Hz/Px

Flow comp.	No
RF pulse type	Normal
Gradient mode	Fast
RF spoiling	On
MB Number	1
FOV Shift	1
Distance22	32

Voxel size: 0.8×0.8×4.0 mm Rel. SNR: 1.00

TA: 2:08

USER: fl_fq_mb

Properties		Special sat.	None
Prio Recon	Off	System	
Before measurement	Oll	Body	Off
After measurement		HEP	On
Load to viewer	On	HEA	On
Inline movie	Off		
Auto store images	On	Positioning mode	FIX
•	Off	Table position	Н
Load to stamp segments		Table position	0 mm
Load images to graphic	Off	MSMA	S - C - T
segments	0"	Sagittal	R >> L
Auto open inline display	Off	Coronal	A >> P
Start measurement without	On	Transversal	F >> H
further preparation	0"	Coil Combine Mode	Adaptive Combine
Wait for user to start	Off	AutoAlign	
Start measurements	single	Auto Coil Select	Default
Routine		······	
Slice group 1		—— Shim mode	Tune up
Slices	1	Adjust with body coil	Off
Dist. factor	700 %	Confirm freq. adjustment	Off
		Assume Silicone	Off
Position	L0.0 A41.5 H62.2	? Ref. amplitude 1H	0.000 V
Orientation	Transversal	Adjustment Tolerance	Auto
Phase enc. dir.	A >> P	Adjust volume	
Rotation	0.00 deg	Position	Isocenter
Phase oversampling	0 %	Orientation	Transversal
FoV read	192 mm	Rotation	0.00 deg
FoV phase	100.0 %	Rotation R >> L	350 mm
Slice thickness	4.0 mm		
TR	23.60 ms	A >> P	263 mm
TE	8.02 ms	F >> H	350 mm
Averages	1	Physio	
Concatenations	1	1st Signal/Mode	Pulse/Trigger
Filter	None	Average cycle	No Signal ms
Coil elements	HEA;HEP	Captured cycle	-not set-
	, ,	Acquisition window	900 ms
Contrast		Trigger pulse	1
Flip angle	15 deg	Trigger delay	0 ms
Averaging mode	Short term	Segments	1
0 0		· ·	
Reconstruction	Magnitude	Phases	38
Measurements	1 	Angio	
Multiple series	Each measurement	Flow mode	Single dir.
Resolution		Encodings	4
		Licoungs	1
Base resolution	256		1 90 cm/s
	256 100 %	Velocity enc. Direction	
Phase resolution	100 %	Velocity enc. Direction	Through plane
Phase resolution Phase partial Fourier	100 % Off	Velocity enc. Direction Rephased images	Through plane On
Phase resolution Phase partial Fourier Interpolation	100 %	Velocity enc. Direction Rephased images Magnitude images	Through plane On On
Phase resolution Phase partial Fourier Interpolation PAT mode	100 % Off Off GRAPPA	Velocity enc. Direction Rephased images Magnitude images Phase images	Through plane On On On
Phase resolution Phase partial Fourier Interpolation	100 % Off Off	Velocity enc. Direction Rephased images Magnitude images	Through plane On On
Phase resolution Phase partial Fourier Interpolation PAT mode	100 % Off Off GRAPPA	Velocity enc. Direction Rephased images Magnitude images Phase images Subtract Std-Dev-Sag	Through plane On On On
Phase resolution Phase partial Fourier Interpolation PAT mode Accel. factor PE	100 % Off Off GRAPPA 2 24	Velocity enc. Direction Rephased images Magnitude images Phase images Subtract	Through plane On On On On
Phase resolution Phase partial Fourier Interpolation PAT mode Accel. factor PE Ref. lines PE	100 % Off Off GRAPPA 2 24 Triple	Velocity enc. Direction Rephased images Magnitude images Phase images Subtract Std-Dev-Sag	Through plane On On On On Off
Phase resolution Phase partial Fourier Interpolation PAT mode Accel. factor PE Ref. lines PE Matrix Coil Mode Reference scan mode	100 % Off Off GRAPPA 2 24 Triple Integrated	Velocity enc. Direction Rephased images Magnitude images Phase images Subtract Std-Dev-Sag Std-Dev-Cor	Through plane On On On On Off Off Off
Phase resolution Phase partial Fourier Interpolation PAT mode Accel. factor PE Ref. lines PE Matrix Coil Mode Reference scan mode Image Filter	100 % Off Off GRAPPA 2 24 Triple Integrated Off	Velocity enc. Direction Rephased images Magnitude images Phase images Subtract Std-Dev-Sag Std-Dev-Cor Std-Dev-Tra Std-Dev-Time	Through plane On On On Off Off Off Off Off Off Off
Phase resolution Phase partial Fourier Interpolation PAT mode Accel. factor PE Ref. lines PE Matrix Coil Mode Reference scan mode Image Filter Distortion Corr.	100 % Off Off GRAPPA 2 24 Triple Integrated Off Off	Velocity enc. Direction Rephased images Magnitude images Phase images Subtract Std-Dev-Sag Std-Dev-Cor Std-Dev-Tra Std-Dev-Time MIP-Sag	Through plane On On On Off Off Off Off Off Off Off Of
Phase resolution Phase partial Fourier Interpolation PAT mode Accel. factor PE Ref. lines PE Matrix Coil Mode Reference scan mode Image Filter	100 % Off Off GRAPPA 2 24 Triple Integrated Off Off Off	Velocity enc. Direction Rephased images Magnitude images Phase images Subtract Std-Dev-Sag Std-Dev-Cor Std-Dev-Tra Std-Dev-Time MIP-Sag MIP-Cor	Through plane On On On Off Off Off Off Off Off Off Of
Phase resolution Phase partial Fourier Interpolation PAT mode Accel. factor PE Ref. lines PE Matrix Coil Mode Reference scan mode Image Filter Distortion Corr.	100 % Off Off GRAPPA 2 24 Triple Integrated Off Off	Velocity enc. Direction Rephased images Magnitude images Phase images Subtract Std-Dev-Sag Std-Dev-Cor Std-Dev-Tra Std-Dev-Time MIP-Sag MIP-Cor MIP-Tra	Through plane On On On Off Off Off Off Off Off Off Of
Phase resolution Phase partial Fourier Interpolation PAT mode Accel. factor PE Ref. lines PE Matrix Coil Mode Reference scan mode Image Filter Distortion Corr. Prescan Normalize	100 % Off Off GRAPPA 2 24 Triple Integrated Off Off Off	Velocity enc. Direction Rephased images Magnitude images Phase images Subtract Std-Dev-Sag Std-Dev-Cor Std-Dev-Tra Std-Dev-Time MIP-Sag MIP-Cor MIP-Tra MIP-Tra	Through plane On On On Off Off Off Off Off Off Off Of
Phase resolution Phase partial Fourier Interpolation PAT mode Accel. factor PE Ref. lines PE Matrix Coil Mode Reference scan mode Image Filter Distortion Corr. Prescan Normalize Normalize	100 % Off Off GRAPPA 2 24 Triple Integrated Off Off Off Off	Velocity enc. Direction Rephased images Magnitude images Phase images Subtract Std-Dev-Sag Std-Dev-Cor Std-Dev-Tra Std-Dev-Time MIP-Sag MIP-Cor MIP-Tra	Through plane On On On Off Off Off Off Off Off Off Of
Phase resolution Phase partial Fourier Interpolation PAT mode Accel. factor PE Ref. lines PE Matrix Coil Mode Reference scan mode Image Filter Distortion Corr. Prescan Normalize Normalize B1 filter Raw filter	100 % Off Off GRAPPA 2 24 Triple Integrated Off Off Off Off Off Off	Velocity enc. Direction Rephased images Magnitude images Phase images Subtract Std-Dev-Sag Std-Dev-Cor Std-Dev-Tra Std-Dev-Time MIP-Sag MIP-Cor MIP-Tra MIP-Tra	Through plane On On On Off Off Off Off Off Off Off Of
Phase resolution Phase partial Fourier Interpolation PAT mode Accel. factor PE Ref. lines PE Matrix Coil Mode Reference scan mode Image Filter Distortion Corr. Prescan Normalize Normalize B1 filter Raw filter Elliptical filter	100 % Off Off Off GRAPPA 2 24 Triple Integrated Off Off Off Off Off Off Off Off Off	Velocity enc. Direction Rephased images Magnitude images Phase images Subtract Std-Dev-Sag Std-Dev-Cor Std-Dev-Tra Std-Dev-Time MIP-Sag MIP-Cor MIP-Tra MIP-Time Save original images	Through plane On On On Off Off Off Off Off Off Off Of
Phase resolution Phase partial Fourier Interpolation PAT mode Accel. factor PE Ref. lines PE Matrix Coil Mode Reference scan mode Image Filter Distortion Corr. Prescan Normalize Normalize B1 filter Raw filter Elliptical filter Geometry	100 % Off Off Off GRAPPA 2 24 Triple Integrated Off Off Off Off Off Off Off Off Off Of	Velocity enc. Direction Rephased images Magnitude images Phase images Subtract Std-Dev-Sag Std-Dev-Cor Std-Dev-Tra Std-Dev-Time MIP-Sag MIP-Cor MIP-Tra MIP-Tra MIP-Time Save original images Sequence Introduction	Through plane On On On Off Off Off Off Off Off Off Of
Phase resolution Phase partial Fourier Interpolation PAT mode Accel. factor PE Ref. lines PE Matrix Coil Mode Reference scan mode Image Filter Distortion Corr. Prescan Normalize Normalize B1 filter Raw filter Elliptical filter	100 % Off Off Off GRAPPA 2 24 Triple Integrated Off Off Off Off Off Off Off Off Off	Velocity enc. Direction Rephased images Magnitude images Phase images Subtract Std-Dev-Sag Std-Dev-Cor Std-Dev-Tra Std-Dev-Time MIP-Sag MIP-Cor MIP-Tra MIP-Tra MIP-Time Save original images Sequence	Through plane On On On Off Off Off Off Off Off Off Of

Flow comp.	No
RF pulse type	Normal
Gradient mode	Fast
RF spoiling	On
MB Number	1
FOV Shift	1
Distance22	32

 $\label{lem:linear_loss} $$\USER\AMRIT\Liyong\20150821\fl_fq_mb_ip_venc90_res256_nav $$$

Voxel size: 0.8×0.8×4.0 mm Rel. SNR: 1.00

TA: 0:12

USER: fl_fq_mb_ip

	HEP	On
Off	—— HEA	On
	Positioning mode	FIX
		H
On		
		0 mm
	_	S - C - T
		R >> L
Off	Coronal	A >> P
Off	Transversal	F >> H
	Coil Combine Mode	Adaptive Combine
Off		
		Default
On	Auto Coil Select	Delault
	Shim mode	Tune up
		Off
single		
		Off
		Off
	? Ref. amplitude 1H	0.000 V
2		Auto
		Isocenter
		Transversal
		0.00 deg
0.00 deg	R >> L	350 mm
0 %	A >> P	263 mm
192 mm	F >> H	350 mm
	1	
	Physio	
		None
19.10 ms		1
5.77 ms	Segments	ı
1	Angio	
2		Single dir.
		1
		•
пса,псе		90 cm/s
		Through plane
15 dea	Rephased images	On
15 deg	Magnitude images	On
Short term		On
_	Subtract	Off
<u> </u>	Std-Dev-Sag	Off
Each measurement		Off
		Off
		Off
100 %		Off
Off	MIP-Cor	Off
Off	MIP-Tra	Off
		Off
None		
	Save original images	On
	··· Sequence	
Off		On
		Off
		1
	Bandwidth	260 Hz/Px
		No
		-
Off	RF pulse type	Normal
		Fast
	— RF spoiling	On
Sequential	131 Spoiling	
Ooquoniiai		
	MB Number	1
Interleaved	MB Number	•
	··· FOV Shift	1
Interleaved		•
	Off Off Off On Off Single 2 1700 % L0.0 A14.9 H25.0 Transversal A >> P 0.00 deg 0 % 192 mm 100.0 % 4.0 mm 19.10 ms 5.77 ms 1 2 None HEA;HEP 15 deg Short term Magnitude 1 Each measurement 256 100 % Off Off Off Off Off Off Off Off Off Of	Off HEA Positioning mode Table position Table position Off Table position MSMA Sagittal Off Coronal Off Transversal Coil Combine Mode AutoAlign Auto Coil Select Shim mode Adjust with body coil Confirm freq. adjustment Assume Silicone ? Ref. amplitude 1H Adjust wolume Position Orientation Orientation A >> P Rotation R >> L A > P 192 mm F >> H 100.0 % Rotation 4.0 mm Physio 19.10 ms 5.77 ms 5.77 ms Angio 15 deg Fiow mode None Fiow mode Encodings Velocity enc. Direction Rephased images Magnitude images Std-Dev-Sag Std-Dev-Sag Std-Dev-Sag Std-Dev-Time <t< td=""></t<>

\\USER\AMRIT\Liyong\20150821\fl_fq_mb_ip_mb2f2p2_venc90_res256
TA: 2:05 PAT: 2 Voxel size: 0.8×0.8×4.0 mm Rel. SNR: 1.00 USER: fl_fq_mb_ip

Prio Recon Before measurement After measurement After measurement Load to viewer On Inline movie Off Auto store images On On HEA HEA On HEA	Properties		Special sat.	None
Before measurement Load to viewer Con Hearth		Off	System	
After measurement Load to viewer On Load to viewer Off Auto store images On Load in stamp segments Off Load images to graphic Off Auto open inline display Off Sauto open inline display Off Start measurement without further preparation On Wait for user to start Off Start measurements Off Start measurement without further preparation Off Wait for user to start Off Start measurement without further preparation Off Wait for user to start Off Start measurement without further preparation Off Start measurement Adaptive Combine Routine Transversal Auto Coll Select Default Auto Coll Select Default Auto Coll Select Trune up Adjust with body coll Off Contract and coll of the properties of the p		OII		Off
Load to viewer On				
Inline movie		On		_
Auto store images				
Load images to graphic Off Table position H Table position H Table position O mm S - C - T Sagital R >> L Sagital R >> L Coronal A >> P Transversal T			Positioning mode	FIX
Load images to graphic segments Auto open inline display Off Sagrittal R >> L		_	Table position	Н
Segments			Table position	0 mm
Auto open inline display	o • • •	Oii	MSMA	S - C - T
Start measurement without further preparation Wait for user to start Start measurements Single Slice group 1 Slices 1 AutoAlign AutoColl Select Default Shirm mode Tune up AutoColl Select Default Default Default Default Default Default Default Default Default Defau		0#	Sagittal	R >> L
Transversal				A >> P
Number Population Wait for user to start Start measurements Single Singl		On		
Variable Start Single				
Solice group 1				
Solice S	Start measurements	single		Default
Silice group Sili				
Sices				•
Dist. lation	Slices	1		
Position	Dist. factor	1700 %		
Orientation Transversal 7 kef. amplitude 1H Auto Phase enc. dir. A >> P Adjust volume Auto FoV read 192 mm Rotation 0.00 deg FoV phase 100.0 % Rotation 0.00 deg Silce thickness 4.0 mm A >> P 263 mm TR 19.10 ms A >> P 263 mm TE 5.77 ms F >> H 350 mm Averages 1 Physio ECG/Trigger Concatenations 1 Physio ECG/Trigger Filter None Average cycle 478 ± 42 ms Coil elements HEA;HEP Average cycle 478 ± 42 ms Contrast Tigger pulse 1 Tigger pulse 1 Filip angle 15 deg Trigger delay 0 ms Segments 1 Reconstruction Magnitude Phase resolution Phase resolution Phase resolution Phase resolution Phase partial Fourier Flow mode Flow mode Encodings 1 <t< td=""><td>Position</td><td>L0.0 A14.9 F11.0</td><td></td><td></td></t<>	Position	L0.0 A14.9 F11.0		
Phase enc. dir. A >> P Adjustment Tolerance Auto Adjust volume Postition Scienter Postition Postition Postition Scienter Postition Postition Postition Scienter Postition				
Rotation	Phase enc. dir.	A >> P		Auto
Postion Socenter				
FoV read			Position	Isocenter
FoV phase 100.0 % Slice thickness 4.0 mm A >> P 263 mm			Orientation	Transversal
Slice thickness		_	Rotation	0.00 deg
TR 19.10 ms A > P 263 mm TE 5.77 ms F>> H 350 mm Averages 1 Physio Concatenations 1 Physio Coll elements HEA;HEP Average cycle 478 ± 42 ms Contrast Captured cycle -not set- Acquisition window 900 ms Filip angle 15 deg Trigger pulse 1 Trigger pulse 1 Reconstruction Magnitude Phases 47 Averaging mode Segments 1 Resolution Each measurement Phases 47 Angio Resolution 256 Phase resolution Single dir. Phase partial Fourier Off Rephased images On Interpolation Off Magnitude images On PAT mode GRAPPA Phase images On Accel. factor PE 2 Subtract Off Ref. lines PE 24 Std-Dev-Sag Off Matrix Coll Mode Triple			R >> L	350 mm
TE			A >> P	263 mm
Averages 1 Concatenations 1 Filter None Average cycle 478 ± 42 ms Coil elements HEA;HEP Captured cycle -not set- Acquisition window 900 ms Filip angle 15 deg Trigger pulse 1 Reconstruction Magnitude Phase partial Fourier Off Rephase partial Fourier Off Magnitude interpolation Off Reference scan mode Separate Reference scan mode Separate Filter Off Sequence Off MIP-Sag Off MIP-Cor Off Sequence Phase filter Off Raw filter Elliptical filter Off Raw filter Elliptical filter Off Raw filter Elliptical filter Off Sequence Introduction On Asymmetric echo Off Captured cycle 478 ± 42 ms Average cycle 478 ± 42 ms Captured cycle -not set- Average cycle 478 ± 42 ms Captured cycle -not set- Average cycle 478 ± 42 ms Captured cycle -not set- Average cycle 478 ± 42 ms Captured cycle -not set- Average cycle 478 ± 42 ms Captured cycle -not set- Average cycle 478 ± 42 ms Captured cycle -not set- Average cycle 478 ± 42 ms Captured cycle charal cond set- Average cycle 478 ± 42 ms Captured cycle charal cond set- Average cycle 478 ± 42 ms Captured cycle charal cond set- Average cycle 4478 ± 42 ms Captured cycle charal cond set- Average cycle 478 ± 42 ms Average cycle 4478 ± 42 ms Captured cycle Average cycle 478 ± 42 ms Captured cycle Floor index of average cycle Average cycle 478 ± 42 ms Captured cycle Floor index of average cycle Average capured Average cycle Average capured Average cycle Average cap	1		F >> H	350 mm
Concatenations Filter None Filter None Coil elements HEA;HEP Contrast Flip angle Averaging mode Averaging mode Reconstruction Magnitude Measurements Multiple series Phase partial Fourier Interpolation PAT mode Accel, factor PE Accel, factor PE Accel, factor PE Accel, factor Off Matrix Coil Mode Accel, factor Off Distortion Corr. Off Distortion Corr. Direction Corresponding Cor				
Filter None HEA;HEP Coil elements HEA;HEP Captured cycle -not set- Contrast Acquisition window 900 ms Flip angle 15 deg Trigger pulse 1 Trigger delay 0 ms Averaging mode Short term Segments 1 Multiple series Each measurement Each measurement Phases 47 Resolution Phase resolution 100 % Phase resolution 0ff Segments On Magnitude images On Magnitude M	_	1		
Coil elements HEA;HEP Contrast Flip angle 15 deg Trigger pulse 1 Averaging mode Short term Segments 1 Reconstruction Magnitude Phases 47 Multiple series Each measurement Resolution 256 Phase resolution 100 % Phase partial Fourier Off Reference Scan mode GRAPPA Accel. factor PE 2 Ref. lines PE 24 Matrix Coil Mode Triple Segrate Std-Dev-Cap Off Std-Dev-Tra Off Distortion Corr. Off Prescan Normalize Off MIP-Tra Off Squence Sequence Geometry Geometry Multiplic mede Short term Segments 1 Trigger pulse 1 Arguistricton window 2 Triger pulse 1 Trigger pulse 1 Trigger pulse 1 Trigger pulse 1 Trigger pulse 1 Arguistricton Single dir. Encodings 1 Velocity enc. 90 cm/s Plow mode Single dir. Encodings 1 Velocity enc. 90 cm/s Phase images On Magnitude i		1		
Contrast Flip angle Averaging mode Averaging mode Reconstruction Magnitude Measurements Multiple series Base resolution Phase partial Fourier Interpolation PAT mode Accel. factor PE Ref. lines PE Accel. factor PE Ref. lines PE Mutrix Coil Mode Reference scan mode Reference scan mode Separate Acquisition window Trigger pulse Trigger pulse Trigger pulse Trigger pulse 1 Trigger delay O ms Segments 1 Phases 47 Angio Flow mode Single dir. Flow mode Single dir. Phow mode				478 ± 42 ms
Flip angle 15 deg Trigger pulse 1 Trigger delay 0 ms Segments 1 Reconstruction Magnitude Phases 47 Multiple series Each measurement Each measurement Flow mode Single dir. Resolution 100 % Flow mode Single dir. Encodings 1 Velocity enc. 90 cm/s Phase resolution 100 % Direction Through plane Rephased images On Magnitude images On Phase partial Fourier Off Magnitude images On Phase images On	Coil elements	HEA;HEP		-not set-
Flip angle 15 deg Trigger pulse 1 Averaging mode Short term Reconstruction Magnitude Measurements 1 Multiple series Each measurement Each measurement Flow mode Single dir. Resolution Flow mode Single dir. Resolution 5 Base resolution 100 % Flow mode Encodings 1 Velocity enc. 90 cm/s Phase partial Fourier Off Rephased images On Interpolation Off Phase partial Fourier Off Std-Dev-Sag Off Std-Dev-Sag Off Std-Dev-Sag Off Std-Dev-Tra Off Std-Dev-Tra Off Std-Dev-Tra Off Std-Dev-Tra Off MIP-Sag Off Std-Dev-Tra Off MIP-Sag Off MIP-Cor Off MIP-Sag Off Std-Dev-Tra Off MIP-Cor Off MIP-Tra Off MIP-Tra Off Save original images On Sequence Flipting on the stage of the same filter Off Save original images On Sequence Introduction Orn Off Saymentic echo Off Introduction On Asymmetric echo Off Saymentic Cor Off Introduction On On Asymmetric echo Off Off Saymentic Corr Off Introduction On On Asymmetric echo Off Off Corr Off Corr Off Off On	Contrast			900 ms
Averaging mode Short term Reconstruction Magnitude Measurements 1 Multiple series Each measurement Each meas		15 deg	- Trigger pulse	1
Reconstruction Magnitude Measurements 1 Multiple series Each measurement 1 Resolution 256 Phase resolution 100 % Phase partial Fourier Off Rephased images On Interpolation Off Magnitude images On Phase images Off Std-Dev-Cor Off Std-Dev-Cor Off Std-Dev-Tra Off Std-Dev-Tra Off Std-Dev-Tra Off MIP-Sag Off MIP-Sag Off MIP-Sag Off MIP-Sag Off MIP-Tra Off MIP-Tra Off MIP-Tra Off Save original images On Phase images On Off Save original images Off Off Save original images Off Off Save original images Off Off Off Save original images Off Off Off Off Off Off Off Off Off Of	i lip dilgie		Trigger delay	0 ms
Reconstruction Magnitude Measurements 1 Multiple series Each measurement 1 Resolution 256 Phase resolution 100 % Phase partial Fourier Off Rephase images On Magnitude images On Phase images On	Averaging mode	Short term	Segments	1
Measurements Multiple series Each measurement Enough glar dir. Each measurement Enough glar dir.		Magnitude	Phases	47
Multiple series Each measurement Each measurement Resolution Ease resolution 256 Encodings 1 Velocity enc. 90 cm/s Direction Through plane Phase partial Fourier Off Rephased images On Magnitude images On PAT mode GRAPPA Accel. factor PE 2 Subtract Off Std-Dev-Sag Off Matrix Coil Mode Triple Std-Dev-Cor Off Std-Dev-Tra Off Std-Dev-Tra Off Std-Dev-Time Off MiP-Sag Off MiP-Sag Off MiP-Sag Off MiP-Sag Off MiP-Cor Off MiP-Time Off MiP-Time Off Save original images On On On On On On On O	Measurements	_		
Resolution Base resolution 256 Phase resolution 100 % Phase partial Fourier Off Interpolation Off PAT mode GRAPPA Accel. factor PE 2 Ref. lines PE 24 Matrix Coil Mode Triple Reference scan mode Separate Image Filter Off Distortion Corr. Prescan Normalize Off Normalize Off Raw filter Bay filter Bay filter Coff Raw filter Bay filter Coff Raw filter Coff Raw filter Coff Std-Dev-Tra Std-Dev-Tra Off MIP-Cor MIP-Tra Off MIP-Tra Off MIP-Tra Off MIP-Tra Off MIP-Tra Off Save original images On Sequence Introduction On Asymmetric echo Off Introduction On Asymmetric echo Off Introduction On Asymmetric echo Off Off On Company Single dir. Encodings 1 Velocity enc. 90 cm/s Dienction On Through plane Nagler Coff Magnitude images On Magni		Each measurement		
Base resolution 256 Phase resolution 100 % Phase partial Fourier Off Interpolation Off PAT mode GRAPPA Accel. factor PE 2 Ref. lines PE 24 Matrix Coil Mode Triple Std-Dev-Cor Off Reference scan mode Separate Image Filter Off Distortion Corr. Off Normalize Off B1 filter Off Raw filter Off Elliptical filter Geometry Velocity enc. 90 cm/s Direction Through plane Rephased images On Magnitude images Off Std-Dev-Cor Off Std-Dev-Cor Off MIP-Sag Off MIP-Sag Off MIP-Cor Off MIP-Tra Off MIP-Tra Off MIP-Tra Off Save original images On Asymmetric echo Off	•			Single dir.
Phase resolution				1
Phase partial Fourier Off Off Magnitude images On Magnitude images On Phase images On On On On On On Phase images On			-	
Interpolation Off Magnitude images On Phase images Off Std-Dev-Tax Off Std-Dev-Sag Off Mither Off Sequence Introduction On Asymmetric echo Off				
PAT mode GRAPPA Accel. factor PE 2 Subtract Off Ref. lines PE 24 Std-Dev-Sag Off Matrix Coil Mode Triple Std-Dev-Cor Off Reference scan mode Separate Std-Dev-Tra Off Image Filter Off MIP-Sag Off Distortion Corr. Off MIP-Sag Off Normalize Off MIP-Cor Off Normalize Off MIP-Tra Off B1 filter Off MIP-Tra Off Raw filter Off Elliptical filter Off Sequence Geometry Phase images On Subtract Off Std-Dev-Sag Off MIP-Cor Off MIP-Sag Off MIP-Tra Off MIP-Tra Off Save original images On Asymmetric echo Off	•	_		
PAT mode GRAPPA Accel. factor PE 2 Subtract Off Ref. lines PE 24 Std-Dev-Sag Off Matrix Coil Mode Triple Std-Dev-Cor Off Reference scan mode Separate Std-Dev-Tra Off Image Filter Off MIP-Sag Off Distortion Corr. Off MIP-Sag Off Normalize Off MIP-Cor Off Normalize Off MIP-Tra Off B1 filter Off MIP-Tra Off Raw filter Off Save original images On Geometry Phase images On Subtract Off Std-Dev-Sag Off MIP-Cor Off MIP-Sag Off MIP-Tra Off MIP-Tra Off MIP-Tra Off Save original images On Asymmetric echo Off	Interpolation	Off		On
Accel. factor PE 2 Ref. lines PE 24 Std-Dev-Sag Off Matrix Coil Mode Triple Std-Dev-Cor Off Reference scan mode Separate Std-Dev-Tra Off Image Filter Off MIP-Sag Off Distortion Corr. Off Prescan Normalize Off Normalize Off B1 filter Off Raw filter Off Elliptical filter Off Geometry Subtract Off Std-Dev-Sag Off MIP-Cor Off MIP-Sag Off MIP-Tra Off MIP-Tra Off MIP-Tra Off Save original images On Asymmetric echo Off	PAT mode	GRAPPA	Phase images	On
Ref. lines PE 24 Std-Dev-Sag Off Matrix Coil Mode Triple Std-Dev-Cor Off Reference scan mode Separate Std-Dev-Tra Off Image Filter Off Std-Dev-Time Off Distortion Corr. Off MIP-Sag Off Prescan Normalize Off MIP-Cor Off Normalize Off MIP-Tra Off B1 filter Off Save original images On Elliptical filter Off Sequence Geometry Std-Dev-Sag Off MIP-Tra Off MIP-Sag Off MIP-Tra Off MIP-Tra Off Save original images On Asymmetric echo Off			Cubtroot	Off
Matrix Coil Mode Triple Reference scan mode Separate Image Filter Off Distortion Corr. Off Prescan Normalize Off Normalize Off B1 filter Off B2 filter Off B3 filter Off B4 filter Off B5 filter Off B5 filter Off B6 Save original images Sequence Geometry Std-Dev-Tra Off MIP-Sag Off MIP-Cor Off MIP-Tra Off MIP-Tra Off Save original images On Sequence Introduction On Asymmetric echo Off				_
Reference scan mode Reference scan mode Separate Std-Dev-Tra Off Std-Dev-Time Off MIP-Sag Off MIP-Cor Normalize Normalize Off B1 filter Raw filter Coff Cometry Std-Dev-Tra Off MIP-Sag MIP-Tra Off MIP-Tra Off MIP-Tra Off Sequence Introduction Asymmetric echo Off Asymmetric echo Off Asymmetric echo			· ·	
Image Filter Off Distortion Corr. Off Prescan Normalize Off Normalize Off B1 filter Off Raw filter Off Elliptical filter Off Geometry Std-Dev-Time Off MIP-Sag Off MIP-Cor Off MIP-Tra Off MIP-Tra Off Save original images On Sequence Introduction On Asymmetric echo Off				_
Image Filter Distortion Corr. Off Prescan Normalize Normalize Off Normalize Off B1 filter Raw filter Coff Elliptical filter Off Geometry MIP-Sag MIP-Cor MIP-Tra Off MIP-Tra Off Save original images On Asymmetric echo Off Asymmetric echo Off	Reterence scan mode	Separate		
Distortion Corr. Off Prescan Normalize Off Normalize Off B1 filter Off Raw filter Off Elliptical filter Off Geometry MIP-Sag MIP-Cor Off MIP-Tra Off MIP-Tra Off Save original images On Sequence Introduction On Asymmetric echo Off	Image Filter	Off		
Prescan Normalize Off Normalize Off HIP-Cor MIP-Tra Off MIP-Tra Off MIP-Tra Off MIP-Tra Off MIP-Tra Off Save original images On Sequence Geometry Introduction Asymmetric echo Off			•	
Normalize Off B1 filter Off Raw filter Off Elliptical filter Off Geometry MIP-Tra MI				Off
B1 filter Off Raw filter Off Elliptical filter Off Geometry MIP-Time Save original images On Sequence Introduction On Asymmetric echo Off			MIP-Tra	Off
Raw filter Off Raw filter Off Elliptical filter Off Geometry Multi clica mode Sequential Save original images On On Asymmetric echo Off		_	MIP-Time	Off
Elliptical filter Off Sequence Geometry Multiplical mode Sequence Introduction On Asymmetric echo Off			Save original images	
Geometry Introduction On Asymmetric echo Off				
Multi-clico mode Sequential Asymmetric echo Off	Elliptical filter	Off		
Multi-clico mode Sequential Asymmetric ecno Oii	Geometry			
Initial Silvo Hodo Sequential Contracte 1		Sequential		
Series Interlegyed Contracts		•	Contrasts	1
Bandwidth 260 Hz/Px	061169		Bandwidth	260 Hz/Px

Flow comp.	No
RF pulse type Gradient mode RF spoiling	Normal Fast On
MB Number FOV Shift Distance22	2 2 72

\\USER\AMRIT\Liyong\20150821\fl_fq_mb_gre \\Uservisite{Voxel size: 1.2×1.2×5.0 mm Rel. SNR: 1.00}

USER: fl_fq_mb_gre

TA: 0:41

Body

On

PAT: Off

Properties		HEP	Off
Prio Recon	Off	—— HEA	Off
Before measurement		Positioning mode	REF
After measurement		Table position	Н
Load to viewer	On	Table position	0 mm
Inline movie	Off	MSMA	S - C - T
Auto store images	On	Sagittal	R >> L
Load to stamp segments	Off	Coronal	A >> P
Load images to graphic	Off	Transversal	F >> H
segments		Coil Combine Mode	Adaptive Combine
Auto open inline display	Off	AutoAlign	
Start measurement without	On	Auto Coil Select	Default
further preparation		Shim mode	Tune up
Wait for user to start	Off	Adjust with body coil	Off
Start measurements	single	Confirm freq. adjustment	Off
Routine		Assume Silicone	Off
Slice group 1		? Ref. amplitude 1H	0.000 V
Slices	1	Adjustment Tolerance	Auto
Dist. factor	20 %	Adjust volume	71010
Position	Isocenter	Position	Isocenter
Orientation	Transversal	Orientation	Transversal
Phase enc. dir.	A >> P	Rotation	0.00 deg
Rotation	0.00 deg	R >> L	350 mm
Phase oversampling	0 %	A >> P	263 mm
FoV read	300 mm	F >> H	350 mm
FoV phase	100.0 %		
Slice thickness	5.0 mm	Physio	
TR	150.00 ms	1st Signal/Mode	None
TE	10.00 ms	Segments	1
Averages	1	Angio	
Concatenations	1	Flow mode	Single dir.
Filter	None	Encodings	1
Coil elements	BC	Velocity enc.	90 cm/s
Contrast		Direction	Through plane
Flip angle	15 deg	Rephased images	On
·····		Magnitude images	On
Averaging mode	Short term	Phase images	On
Reconstruction	Magnitude	Subtract	Off
Measurements	1	Std-Dev-Sag	Off
Multiple series	Each measurement	Std-Dev-Gag Std-Dev-Cor	Off
Resolution		Std-Dev-Tra	Off
Base resolution	256	Std-Dev-Time	Off
Phase resolution	100 %	MIP-Sag	Off
Phase partial Fourier	Off	MIP-Cor	Off
Interpolation	Off	MIP-Tra	Off
		··· MIP-Time	Off
PAT mode	None	Save original images	On
Matrix Coil Mode	Auto (CP)		
Image Filter	Off	Sequence	
Distortion Corr.	Off	Introduction	On O#
Prescan Normalize	Off	Asymmetric echo	Off
Normalize	Off	Contrasts	1 260 H z /Dy
B1 filter	Off	Bandwidth	260 Hz/Px
Raw filter	Off	Flow comp.	No
Elliptical filter	Off	RF pulse type	Normal
•		Gradient mode	Fast
Geometry	Comment:-I	RF spoiling	On
Multi alian manda	Sequential		
Multi-slice mode		MD Number	4
Multi-slice mode Series	Interleaved	MB Number	1
		MB Number FOV Shift	1 1
Series	Interleaved		•

\\USER\AMRIT\Liyong\20150821\ep2d_bold_slc_prof

USER: ep2d_bold_slc_prof

Voxel size: 7.8×3.9×5.0 mm Rel. SNR: 1.00

PAT: Off

TA: 5.3 s

System

			. – – –
Properties		Body	On O"
Prio Recon	Off	HEP	Off
Before measurement	.	HEA	Off
After measurement		Positioning mode	REF
Load to viewer	On	Table position	H
Inline movie	Off	Table position	0 mm
Auto store images	On	MSMA	S - C - T
Load to stamp segments	Off	Sagittal	R >> L
Load images to graphic	Off	Coronal	A >> P
segments	Oli	Transversal	F >> H
	Off		
Auto open inline display		Coil Combine Mode	Sum of Squares
Start measurement without	On	AutoAlign	Defectit
further preparation	0"	Auto Coil Select	Default
Wait for user to start	Off	Shim mode	Standard
Start measurements	single	Adjust with body coil	Off
Routine		Confirm freq. adjustment	Off
Slice group 1		Assume Silicone	Off
Slices	1	? Ref. amplitude 1H	0.000 V
Dist. factor	50 %	Adjustment Tolerance	Auto
Position	Isocenter	Adjust volume	Adio
Orientation	Transversal	Position	Isocenter
Phase enc. dir.	A >> P	Orientation	Transversal
Rotation	0.00 deg	Rotation	0.00 deg
Phase oversampling	0 %	R >> L	500 mm
FoV read	500 mm	A >> P	500 mm
FoV phase	100.0 %	F >> H	5 mm
Slice thickness	5.0 mm	Physio	
TR	113 ms	1st Signal/Mode	None
TE	53 ms		140110
Averages	1	BOLD	
Concatenations	1	GLM Statistics	On
Filter	None	Dynamic t-maps	Off
Coil elements	BC	Starting ignore meas	0
Contrast		Ignore after transition	0
MTC	Off	Model transition states	On
		Temp. highpass filter	On
Flip angle	90 deg	Threshold	4.00
Fat suppr.	Fat sat.	Paradigm size	20
Averaging mode	Long term	Meas[1]	Baseline
Reconstruction	Magnitude	Meas[2]	Baseline
Measurements	20	Meas[3]	Baseline
Delay in TR	0 ms	Meas[4]	Baseline
Multiple series	Off	Meas[5]	Baseline
		Meas[6]	Baseline
Resolution		Meas[0] Meas[7]	Baseline
Base resolution	128	Meas[8]	Baseline
Phase resolution	50 %	Meas[9]	Baseline
Phase partial Fourier	Off		
Interpolation	Off	Meas[10]	Baseline Active
		Meas[11]	
PAT mode	None	Meas[12]	Active
Matrix Coil Mode	Auto (CP)	Meas[13]	Active
Distortion Corr.	Off	Meas[14]	Active
Prescan Normalize	Off	Meas[15]	Active
Raw filter	_	Meas[16]	Active
	On Off	Meas[17]	Active
Elliptical filter	Off	Meas[18]	Active
Hamming	Off	Meas[19]	Active
Geometry		Meas[20]	Active
Multi-slice mode	Interleaved	Motion correction	On
Series	Interleaved	Interpolation	3D-K-space
		Spatial filter	Off .
Special sat.	None	1 .	
System		Sequence	

Introduction Bandwidth Free echo spacing Echo spacing	Off 752 Hz/Px Off 1.38 ms
EPI factor RF pulse type Gradient mode	64 Normal Fast
RF90 duration	5120

\\USER\AMRIT\Liyong\20150821\ep2d_fairest_UI_iPAT_OVS_mbf3O2

TA: 1:36 PAT: Off Voxel size: 2.7×2.7×5.0 mm Rel. SNR: 1.00 USER: ep2d_fairest_UI_iPAT_OVS

Properties		Position	L0.0 A46.6 F33.3
Prio Recon	Off	Orientation Special sat.	Coronal None
Before measurement		Special sat.	None
After measurement		System	
Load to viewer	On	Body	Off
Inline movie	Off	HEP	On
Auto store images	On	HEA	On
Load to stamp segments	Off	Positioning mode	REF
Load images to graphic	Off	Table position	H
segments		Table position	0 mm
Auto open inline display	Off	MSMA	S - C - T
Start measurement without	On	Sagittal	R >> L
further preparation	0"	Coronal	A >> P
Wait for user to start	Off	Transversal	F >> H
Start measurements	single	Coil Combine Mode	Sum of Squares
Routine		AutoAlign	· ·
Slice group 1		Auto Coil Select	Default
Slices	12		Chandard
Dist. factor	100 %	Shim mode	Standard
Position	L2.4 P43.6 F6.7	Adjust with body coil	Off Off
Orientation	Transversal	Confirm freq. adjustment	Off Off
Phase enc. dir.	A >> P	Assume Silicone	Off 0.000 V
Rotation	0.00 deg	? Ref. amplitude 1H	
Phase oversampling	0 %	Adjustment Tolerance Adjust volume	Auto
FoV read	175 mm	Position	L2.4 P43.6 F6.7
FoV phase	59.4 %	Orientation	Transversal
Slice thickness	5.0 mm	Rotation	0.00 deg
TR	3000 ms	R >> L	175 mm
TE	16 ms	A >> P	104 mm
Averages	1	F>> H	115 mm
Concatenations	1	l	113 11111
Filter	None	Physio	
Coil elements	HEA;HEP	1st Signal/Mode	None
Contrast		BOLD	
MTC	Off	GLM Statistics	Off
Flip angle	90 deg	Dynamic t-maps	Off
Fat suppr.	Fat sat.	Starting ignore meas	0
Averaging made	I are a terms	Ignore after transition	0
Averaging mode	Long term	Model transition states	On
Reconstruction	Magnitude 20	Temp. highpass filter	On
Measurements	0 ms	Threshold	4.00
Delay in TR		Paradigm size	20
Multiple series	Off	Meas[1]	Baseline
Resolution		Meas[2]	Baseline
Base resolution	64	Meas[3]	Baseline
Phase resolution	100 %	Meas[4]	Baseline
Phase partial Fourier	6/8	Meas[5]	Baseline
Interpolation	Off	Meas[6]	Baseline
PAT mode	None	Meas[7]	Baseline
Matrix Coil Mode	Auto (CP)	Meas[8]	Baseline
	Auto (OF)	Meas[9]	Baseline
Distortion Corr.	Off	Meas[10]	Baseline
Prescan Normalize	Off	Meas[11]	Active
Raw filter	On	Meas[12]	Active
Elliptical filter	Off	Meas[13]	Active
Hamming	Off	Meas[14]	Active
Geometry		Meas[15]	Active
Multi-slice mode	Interleaved	Meas[16]	Active
Series	Ascending	Meas[17]	Active
Jenes	Ascellaing	Meas[18]	Active
Sat. region 1		Meas[19]	Active
Thickness	100 mm	Meas[20]	Active

Motion correction Spatial filter	Off Off
Sequence	
Introduction Bandwidth Free echo spacing Echo spacing	Off 3256 Hz/Px Off 0.69 ms
EPI factor RF pulse type Gradient mode	38 Normal Fast
Perfusion Method IR Slab Thickness Post IR Delay Inf.Sat Thickness Post Inf.Sat Delay IR-Inf.Sat Spacing Pre.IR Time Delay non-sel IR Slab Thic Ovs Crusher Gradient	NONE 100 mm 700000 us 100 mm 1000000 us 0 mm 0 us 300 mm 2.0 (1/2 on; 0 s/mm2

3.0 1.0 (1 off,0

3.0

4.0

MB Factor

Fake ASL FOV Shift

DummyScan

 $\label{local_loc$

		L Cot ragion 4	
Properties		Sat. region 1 Thickness	80 mm
Prio Recon	Off	Position	R3.6 P0.0 H0.0
Before measurement		Orientation	Sagittal
After measurement		Special sat.	None
Load to viewer	On	Special sat.	None
Inline movie	Off	System	
Auto store images	On	Body	Off
Load to stamp segments	Off	HEP	On
Load images to graphic	Off	HEA	On
segments		Decitioning mode	FIV
Auto open inline display	Off	Positioning mode	FIX
Start measurement without	On	Table position	H
further preparation		Table position	0 mm
Wait for user to start	Off	MSMA	S - C - T
Start measurements	single	Sagittal	R >> L
	3 -	Coronal	A >> P
outine		Transversal	F >> H
Slab group 1		Save uncombined	Off
Slabs	3	Coil Combine Mode	Adaptive Combine
Dist. factor	0 %	AutoAlign	
Position	R3.6 A5.4 F9.7	Auto Coil Select	Default
Orientation	Sagittal	Chim mad-	Ctondord
Phase enc. dir.	H >> F	Shim mode	Standard
Rotation	90.00 deg	Adjust with body coil	Off
Phase oversampling	0 %	Confirm freq. adjustment	Off
Slice oversampling	25.0 %	Assume Silicone	Off
Slices per slab	8	? Ref. amplitude 1H	0.000 V
FoV read	180 mm	Adjustment Tolerance	Auto
FoV phase	100.0 %	Adjust volume	
Slice thickness	3.0 mm	Position	R3.6 A5.4 F9.7
TR	5000 ms	Orientation	Sagittal
TE	113.98 ms	Rotation	90.00 deg
	1 13.90 1115	A >> P	180 mm
Averages Concatenations	1	F >> H	180 mm
	•	R >> L	72 mm
Filter	None	Di :	
Coil elements	HEA;HEP	Physio	
ontrast		1st Signal/Mode	None
Flip angle	180 deg	Sequence	
Fat suppr.	Fat sat.	Introduction	Off
Fat sat. mode	Strong	Dimension	3D
Averaging mode	Long term	Reordering	Centric
Reconstruction	Magnitude	Contrasts	1
Measurements	6	Bandwidth	1262 Hz/Px
Pause after meas. 1	0.0 s	Echo spacing	0.9 ms
			40
Pause after meas. 2	0.0 s	Turbo factor	10
Pause after meas. 3	0.0 s	EPI factor	120
Pause after meas. 4	0.0 s	RF pulse type	Normal
Pause after meas. 5	0.0 s	Gradient mode	Fast*
Multiple series	Off	refocussing type	sinc 2560
esolution		flip angle excit	90
Base resolution	120	Crusher Momentum	12700
Phase resolution	100 %	Crusher Time	790
Slice resolution	100 %	phase encoding	ON
Slice partial Fourier	Off	Maxwell compensation	Off
Interpolation	Off		
	••••••••••••••••••••••••••••••••••••••	ICE program	single
PAT mode	None	prepscans	0
Matrix Coil Mode	Auto (CP)	MB Number	3
		Shift or Not	0
Raw filter	Off	Dummy Number	1
Geometry		MB Number2	1
		Dummy TR(ut:ms)	0

 $\label{local_local_local_local_local} $$\USER\AMRIT\Liyong\20150821\BP_nIV_m2m1_sag$$

Properties		Sat. region 1	
Prio Recon	Off	—— Thickness	60 mm
Before measurement	Oil	Position	R3.6 P0.0 H0.0
After measurement		Orientation	Sagittal
	On	Special sat.	None
Load to viewer	On O#	System	
Inline movie	Off	System	0"
Auto store images	On	Body	Off
Load to stamp segments	Off	HEP	On
Load images to graphic	Off	HEA	On
segments		Positioning mode	FIX
Auto open inline display	Off	Table position	H
Start measurement without	On	Table position	0 mm
further preparation		MSMA	S - C - T
Wait for user to start	Off		
Start measurements	single	Sagittal	R >> L
) autin a		Coronal	A >> P
Routine		Transversal	F >> H
Slab group 1	_	Save uncombined	Off
Slabs	2	Coil Combine Mode	Adaptive Combine
Dist. factor	0 %	AutoAlign	
Position	R3.6 A5.4 F9.7	Auto Coil Select	Default
Orientation	Sagittal	Shim mode	Standard
Phase enc. dir.	H >> F		
Rotation	90.00 deg	Adjust with body coil	Off
Phase oversampling	0 %	Confirm freq. adjustment	Off
Slice oversampling	25.0 %	Assume Silicone	Off
Slices per slab	8	? Ref. amplitude 1H	0.000 V
FoV read	180 mm	Adjustment Tolerance	Auto
FoV phase	100.0 %	Adjust volume	
Slice thickness	3.0 mm	Position	R3.6 A5.4 F9.7
TR	5000 ms	Orientation	Sagittal
TE		Rotation	90.00 deg
	113.98 ms	A >> P	180 mm
Averages	1	F >> H	180 mm
Concatenations	1	R >> L	48 mm
Filter	None	l	10 11111
Coil elements	HEA;HEP	Physio	
Contrast		1st Signal/Mode	None
Flip angle	180 deg	Sequence	
Fat suppr.	Fat sat.	Introduction	Off
Fat sat. mode	Strong	Dimension	3D
		Reordering	Centric
Averaging mode	Long term	Contrasts	1
Reconstruction	Magnitude	Bandwidth	1262 Hz/Px
Measurements	6	Echo spacing	0.9 ms
Pause after meas. 1	0.0 s		
Pause after meas. 2	0.0 s	Turbo factor	10
Pause after meas. 3	0.0 s	EPI factor	120
Pause after meas. 4	0.0 s	RF pulse type	Normal
Pause after meas. 5	0.0 s	Gradient mode	Fast*
Multiple series	Off		
·		refocussing type	sinc 2560
Resolution		flip angle excit	90
Base resolution	120	Crusher Momentum	12700
Phase resolution	100 %	Crusher Time	790
Slice resolution	100 %	phase encoding	ON
Slice partial Fourier	Off	Maxwell compensation	Off
Interpolation	Off	ICE program	single
		prepscans	0
PAT mode	None	MB Number	2
Matrix Coil Mode	Auto (CP)	Shift or Not	0
Paw filter	Off		1
Raw filter	OII	Dummy Number	1
Geometry		MB Number2 Dummy TR(ut:ms)	1 0
•		i ilimmy/iP/liftmc/	

\\USER\AMRIT\Liyong\20150821\ep2d_fairest_UI_iPAT_OVS_asl_mbf3O2 Voxel size: 2.7×2.7×4.0 mm TA: 4:48 PAT: Off Rel. SNR: 1.00 USER: ep2d_fairest_UI_iPAT_OVS Position L0.0 A76.2 H67.2 **Properties** C > T43.4 Orientation Prio Recon Off Special sat. None Before measurement After measurement System Off Load to viewer On Body Off HEP Inline movie On

mine movie	OII	ПЕР	On
Auto store images	On	HEA	On
Load to stamp segments	Off	Diti-ni-n	DEE
Load images to graphic	Off	Positioning mode	REF
segments		Table position	Н
Auto open inline display	Off	Table position	0 mm
		MSMA	S - C - T
Start measurement without	On	Sagittal	R >> L
further preparation		Coronal	A >> P
Wait for user to start	Off	Transversal	F >> H
Start measurements	single		
Douting		Coil Combine Mode	Sum of Squares
Routine		AutoAlign	 D ()
Slice group 1		Auto Coil Select	Default
Slices	21	Shim mode	Standard
Dist. factor	10 %		Off
Position	L4.2 P52.4 H63.1	Adjust with body coil	_
Orientation	T > C-42.0	Confirm freq. adjustment	Off
Phase enc. dir.	A >> P	Assume Silicone	Off
Rotation	0.00 deg	? Ref. amplitude 1H	0.000 V
		Adjustment Tolerance	Auto
Phase oversampling	0 %	Adjust volume	
FoV read	175 mm	Position	L4.2 P52.4 H63.1
FoV phase	59.4 %	Orientation	T > C-42.0
Slice thickness	4.0 mm		
TR	3000 ms	Rotation	0.00 deg
TE	16 ms	R >> L	175 mm
Averages	1	A >> P	104 mm
Concatenations	1	F >> H	92 mm
Filter	None	Dhysia	
		Physio	
Coil elements	HEA;HEP	1st Signal/Mode	None
Contrast		BOLD	
MTC	Off		O#
		GLM Statistics	Off
Flip angle	90 deg	Dynamic t-maps	Off
Fat suppr.	Fat sat.	Starting ignore meas	0
Averaging mode	Long term	Ignore after transition	0
Reconstruction	Magnitude	Model transition states	On
		Temp. highpass filter	On
Measurements	60	Threshold	4.00
Delay in TR	0 ms	Paradigm size	20
Multiple series	Off	Meas[1]	Baseline
Resolution			
	0.1	Meas[2]	Baseline
Base resolution	64	Meas[3]	Baseline
Phase resolution	400.07		D 1:
Phase partial Fourier	100 %	Meas[4]	Baseline
	6/8	Meas[5]	Baseline Baseline
Interpolation			
	6/8 Off	Meas[5] Meas[6]	Baseline
PAT mode	6/8 Off None	Meas[5] Meas[6] Meas[7]	Baseline Baseline Baseline
	6/8 Off	Meas[5] Meas[6] Meas[7] Meas[8]	Baseline Baseline Baseline Baseline
PAT mode Matrix Coil Mode	6/8 Off None Auto (CP)	Meas[5] Meas[6] Meas[7] Meas[8] Meas[9]	Baseline Baseline Baseline Baseline Baseline
PAT mode Matrix Coil Mode Distortion Corr.	6/8 Off None Auto (CP)	Meas[5] Meas[6] Meas[7] Meas[8] Meas[9] Meas[10]	Baseline Baseline Baseline Baseline Baseline Baseline Baseline
PAT mode Matrix Coil Mode Distortion Corr. Prescan Normalize	6/8 Off None Auto (CP) Off	Meas[5] Meas[6] Meas[7] Meas[8] Meas[9] Meas[10] Meas[11]	Baseline Baseline Baseline Baseline Baseline Baseline Active
PAT mode Matrix Coil Mode Distortion Corr. Prescan Normalize Raw filter	6/8 Off None Auto (CP) Off Off	Meas[5] Meas[6] Meas[7] Meas[8] Meas[9] Meas[10] Meas[11] Meas[12]	Baseline Baseline Baseline Baseline Baseline Baseline Active Active
PAT mode Matrix Coil Mode Distortion Corr. Prescan Normalize	6/8 Off None Auto (CP) Off	Meas[5] Meas[6] Meas[7] Meas[8] Meas[9] Meas[10] Meas[11]	Baseline Baseline Baseline Baseline Baseline Baseline Active Active Active
PAT mode Matrix Coil Mode Distortion Corr. Prescan Normalize Raw filter	6/8 Off None Auto (CP) Off Off	Meas[5] Meas[6] Meas[7] Meas[8] Meas[9] Meas[10] Meas[11] Meas[12]	Baseline Baseline Baseline Baseline Baseline Baseline Active Active
PAT mode Matrix Coil Mode Distortion Corr. Prescan Normalize Raw filter Elliptical filter Hamming	6/8 Off None Auto (CP) Off Off On Off	Meas[5] Meas[6] Meas[7] Meas[8] Meas[9] Meas[10] Meas[11] Meas[12] Meas[13] Meas[14]	Baseline Baseline Baseline Baseline Baseline Baseline Active Active Active
PAT mode Matrix Coil Mode Distortion Corr. Prescan Normalize Raw filter Elliptical filter Hamming Geometry	6/8 Off None Auto (CP) Off Off On Off	Meas[5] Meas[6] Meas[7] Meas[8] Meas[9] Meas[10] Meas[11] Meas[12] Meas[13] Meas[14] Meas[15]	Baseline Baseline Baseline Baseline Baseline Baseline Active Active Active Active Active Active
PAT mode Matrix Coil Mode Distortion Corr. Prescan Normalize Raw filter Elliptical filter Hamming	6/8 Off None Auto (CP) Off Off On Off	Meas[5] Meas[6] Meas[7] Meas[8] Meas[9] Meas[10] Meas[11] Meas[12] Meas[13] Meas[14] Meas[15] Meas[16]	Baseline Baseline Baseline Baseline Baseline Baseline Active Active Active Active Active Active Active Active
PAT mode Matrix Coil Mode Distortion Corr. Prescan Normalize Raw filter Elliptical filter Hamming Geometry	6/8 Off None Auto (CP) Off Off Off On Off Off Off	Meas[5] Meas[6] Meas[7] Meas[8] Meas[9] Meas[10] Meas[11] Meas[12] Meas[13] Meas[14] Meas[15] Meas[16] Meas[17]	Baseline Baseline Baseline Baseline Baseline Baseline Active
PAT mode Matrix Coil Mode Distortion Corr. Prescan Normalize Raw filter Elliptical filter Hamming Geometry Multi-slice mode Series	6/8 Off None Auto (CP) Off Off On Off Off	Meas[5] Meas[6] Meas[7] Meas[8] Meas[9] Meas[10] Meas[11] Meas[12] Meas[13] Meas[14] Meas[15] Meas[16] Meas[17] Meas[17]	Baseline Baseline Baseline Baseline Baseline Baseline Active
PAT mode Matrix Coil Mode Distortion Corr. Prescan Normalize Raw filter Elliptical filter Hamming Geometry Multi-slice mode	6/8 Off None Auto (CP) Off Off Off On Off Off Off	Meas[5] Meas[6] Meas[7] Meas[8] Meas[9] Meas[10] Meas[11] Meas[12] Meas[13] Meas[14] Meas[15] Meas[16] Meas[17]	Baseline Baseline Baseline Baseline Baseline Baseline Active

Motion correction Spatial filter	Off Off	
Sequence		
Introduction Bandwidth Free echo spacing Echo spacing	Off 3256 Hz/Px Off 0.69 ms	
EPI factor RF pulse type Gradient mode	38 Normal Fast	
Perfusion Method IR Slab Thickness Post IR Delay Inf.Sat Thickness Post Inf.Sat Delay IR-Inf.Sat Spacing Pre.IR Time Delay non-sel IR Slab Thic Ovs Crusher Gradient MB Factor Fake ASL FOV Shift DummyScan	QUIPSS II 112 mm 700000 us 100 mm 1000000 us 0 mm 0 us 312 mm 2.0 (1/2 on; 0 s/mm2 3.0 0.0 (1 off,0 3.0 4.0	

TA: 2:04

USER: fl_fq_mb

Properties		Special sat.	None
Prio Recon	Off	System	
Before measurement		Body	Off
After measurement		HEP	On
Load to viewer	On	HEA	On
Inline movie	Off		-
Auto store images	On	Positioning mode	FIX
Load to stamp segments	Off	Table position	Н
Load images to graphic	Off	Table position	0 mm
segments	Oli	MSMA	S - C - T
	Off	Sagittal	R >> L
Auto open inline display		Coronal	A >> P
Start measurement without	On	Transversal	F >> H
further preparation	0"	Coil Combine Mode	Adaptive Combine
Wait for user to start	Off	AutoAlign	
Start measurements	single	Auto Coil Select	Default
Routine		—— Shim mode	Tune up
Slice group 1		Adjust with body coil	Off
Slices	1	Confirm freq. adjustment	Off
Dist. factor	700 %	Assume Silicone	Off
Position	L0.0 A23.5 F6.6		
Orientation	Transversal	? Ref. amplitude 1H	0.000 V
Phase enc. dir.	A >> P	Adjustment Tolerance	Auto
Rotation	0.00 deg	Adjust volume	la a a a a ta a
Phase oversampling	0 %	Position	Isocenter
FoV read	192 mm	Orientation	Transversal
FoV phase	100.0 %	Rotation	0.00 deg
Slice thickness	4.0 mm	R >> L	350 mm
TR	19.10 ms	A >> P	263 mm
TE	5.77 ms	F >> H	350 mm
Averages	1	Physio	
Concatenations	1	1st Signal/Mode	Dulco/Triggor
Filter	None		Pulse/Trigger
Coil elements	HEA;HEP	Average cycle	No Signal ms
Con elements	HEA,HEF	Captured cycle	-not set-
Contrast		Acquisition window	870 ms
Flip angle	15 deg	Trigger pulse	1
	01 44	Trigger delay	0 ms
Averaging mode	Short term	Segments	1
Reconstruction	Magnitude	Phases	45
Measurements	1	Angio	
Multiple series	Each measurement	Flow mode	Single dir.
Resolution		Encodings	1
Base resolution	256	Velocity enc.	90 cm/s
Phase resolution	100 %	Direction	Through plane
Phase partial Fourier	Off	Rephased images	On
Interpolation	Off	Magnitude images	On
	••••••••••••••••••••••••••••••••••••••	Phase images	On
PAT mode	GRAPPA	i nase illayes	OII
Accel. factor PE	2	Subtract	Off
Ref. lines PE	24	Std-Dev-Sag	Off
Matrix Coil Mode	Auto (Triple)	Std-Dev-Cor	Off
IVIALIA CUII IVIUUE	/ (dto (Triple)	 -	_
		Std-Dev-Tra	Off
Reference scan mode	Integrated		Off Off
Reference scan mode Image Filter	Integrated Off	Std-Dev-Time	Off
Reference scan mode Image Filter Distortion Corr.	Integrated Off Off	Std-Dev-Time MIP-Sag	Off Off
Reference scan mode Image Filter	Integrated Off	Std-Dev-Time MIP-Sag MIP-Cor	Off Off Off
Reference scan mode Image Filter Distortion Corr.	Integrated Off Off	Std-Dev-Time MIP-Sag MIP-Cor MIP-Tra	Off Off Off Off
Reference scan mode Image Filter Distortion Corr. Prescan Normalize	Integrated Off Off Off	Std-Dev-Time MIP-Sag MIP-Cor MIP-Tra MIP-Time	Off Off Off Off Off
Reference scan mode Image Filter Distortion Corr. Prescan Normalize Normalize	Integrated Off Off Off Off Off	Std-Dev-Time MIP-Sag MIP-Cor MIP-Tra	Off Off Off Off
Reference scan mode Image Filter Distortion Corr. Prescan Normalize Normalize B1 filter Raw filter	Integrated Off Off Off Off Off Off Off	Std-Dev-Time MIP-Sag MIP-Cor MIP-Tra MIP-Time Save original images	Off Off Off Off Off
Reference scan mode Image Filter Distortion Corr. Prescan Normalize Normalize B1 filter Raw filter Elliptical filter	Integrated Off Off Off Off Off Off Off Off Off	Std-Dev-Time MIP-Sag MIP-Cor MIP-Tra MIP-Time	Off Off Off Off Off
Reference scan mode Image Filter Distortion Corr. Prescan Normalize Normalize B1 filter Raw filter Elliptical filter Geometry	Integrated Off Off Off Off Off Off Off Off Off O	Std-Dev-Time MIP-Sag MIP-Cor MIP-Tra MIP-Time Save original images Sequence Introduction	Off Off Off Off Off On
Reference scan mode Image Filter Distortion Corr. Prescan Normalize Normalize B1 filter Raw filter Elliptical filter	Integrated Off Off Off Off Off Off Off Off Off	Std-Dev-Time MIP-Sag MIP-Cor MIP-Tra MIP-Time Save original images Sequence	Off Off Off Off Off Off On

Flow comp.	No
RF pulse type Gradient mode RF spoiling	Normal Fast On
MB Number FOV Shift	3 3
Distance22	32

TA: 2:04

USER: fl_fq_mb

roperties		Special sat.	None
Prio Recon	Off	System	
Before measurement		Body	Off
After measurement		HEP	On
Load to viewer	On	HEA	On
Inline movie	Off		····· <u>·</u>
Auto store images	On	Positioning mode	FIX
Load to stamp segments	Off	Table position	Н
Load images to graphic	Off	Table position	0 mm
segments	O.I.	MSMA	S - C - T
Auto open inline display	Off	Sagittal	R >> L
Start measurement without	On	Coronal	A >> P
further preparation	On	Transversal	F >> H
Wait for user to start	Off	Coil Combine Mode	Adaptive Combine
		AutoAlign	
Start measurements	single	Auto Coil Select	Default
Coutine		—— Shim mode	Tune up
Slice group 1		Adjust with body coil	Off
Slices	1	Confirm freq. adjustment	Off
Dist. factor	700 %	Assume Silicone	Off
Position	L0.0 A23.5 F6.6	? Ref. amplitude 1H	0.000 V
Orientation	Transversal	Adjustment Tolerance	Auto
Phase enc. dir.	A >> P	Adjust volume	Auto
Rotation	0.00 deg	Position	laggantar
Phase oversampling	0 %	Orientation	Isocenter
FoV read	192 mm		Transversal
FoV phase	100.0 %	Rotation	0.00 deg
Slice thickness	4.0 mm	R >> L	350 mm
TR	19.10 ms	A >> P	263 mm
TE	5.77 ms	F >> H	350 mm
Averages	1	Physio	
Concatenations	1	1st Signal/Mode	Pulse/Trigger
Filter	None	Average cycle	No Signal ms
Coil elements	HEA;HEP	Captured cycle	-not set-
	11273,1121	Acquisition window	870 ms
Contrast		Trigger pulse	1
Flip angle	15 deg	Trigger bulse	0 ms
Averaging mode	Short term	Segments	1
Reconstruction	Magnitude	Phases	45
Measurements	1	Angio	
Multiple series	Each measurement	Flow mode	Single dir.
Resolution		Encodings	1
Base resolution	256	Velocity enc.	90 cm/s
Phase resolution	100 %	Direction	Through plane
Phase partial Fourier	Off	Rephased images	On
Interpolation	Off	Magnitude images	On
	- 	Phase images	On
PAT mode	GRAPPA		
Accel. factor PE	2	Subtract	Off
Ref. lines PE	24	Std-Dev-Sag	Off
Matrix Coil Mode	Auto (Triple)	Std-Dev-Cor	Off
Reference scan mode	Integrated	Std-Dev-Tra	Off
		Std-Dev-Time	Off
Image Filter	Off	MIP-Sag	Off
Distortion Corr.	Off	MIP-Cor	Off
Prescan Normalize	Off	MIP-Tra	Off
Normalize	Off	MIP-Time	Off
B1 filter	Off	Save original images	On
	Off	Jave Original Illiages	Oil
Raw filter		_	
Raw filter Elliptical filter	Off	Sequence	
Elliptical filter	Off	Introduction	On
Elliptical filter Geometry			On Off
Elliptical filter	Off Sequential Interleaved	Introduction	

Flow comp.	No	
RF pulse type Gradient mode RF spoiling	Normal Fast On	
MB Number FOV Shift	3 1 32	
Distance22	32	

operties		Special sat.	None
Prio Recon	Off	System	
Before measurement		Body	Off
After measurement		HEP	On
Load to viewer	On	HEA	On
Inline movie	Off		
Auto store images	On	Positioning mode	FIX
Load to stamp segments	Off	Table position	Н
Load images to graphic	Off	Table position	0 mm
segments		MSMA	S - C - T
Auto open inline display	Off	Sagittal	R >> L
Start measurement without	On	Coronal	A >> P
further preparation	.	Transversal	F >> H
Wait for user to start	Off	Coil Combine Mode	Adaptive Combine
Start measurements	single	AutoAlign	
otali measurements	Single	Auto Coil Select	Default
outine		—— Shim mode	Tune up
Slice group 1		Adjust with body coil	Off
Slices	3	Confirm freq. adjustment	Off
Dist. factor	700 %	Assume Silicone	Off
Position	L0.0 A23.5 H25.4	? Ref. amplitude 1H	0.000 V
Orientation	Transversal		
Phase enc. dir.	A >> P	Adjustment Tolerance Adjust volume	Auto
Rotation	0.00 deg	1	laaaantan
Phase oversampling	0 %	Position	Isocenter
FoV read	192 mm	Orientation	Transversal
FoV phase	100.0 %	Rotation	0.00 deg
Slice thickness	4.0 mm	R >> L	350 mm
TR	19.10 ms	A >> P	263 mm
TE	5.77 ms	F >> H	350 mm
Averages	1	Physio	
Concatenations	3	1st Signal/Mode	None
Filter	None	Segments	1
Coil elements	HEA;HEP		
	•	Angio	
ontrast	45.1	Flow mode	Single dir.
Flip angle	15 deg	Encodings	1
Averaging mode	Short term	Velocity enc.	90 cm/s
Reconstruction	Magnitude	Direction	Through plane
Measurements	1	Rephased images	On
Multiple series	Each measurement	Magnitude images	On
·		Phase images	On
esolution		—— Subtract	Off
Base resolution	256	Std-Dev-Sag	Off
Phase resolution	100 %	Std-Dev-Sag Std-Dev-Cor	Off
Phase partial Fourier	Off	Std-Dev-Col	Off
Interpolation	Off	Std-Dev-Tra Std-Dev-Time	Off
PAT mode	GRAPPA	MIP-Sag	Off
Accel. factor PE	2	MIP-Cor	Off
Ref. lines PE	48	MIP-Cor MIP-Tra	Off
Matrix Coil Mode		MIP-Tra	Off
	Triple		
Reference scan mode	Integrated	Save original images	On
Image Filter	Off	Sequence	
Distortion Corr.	Off	Introduction	On
Prescan Normalize	Off	Asymmetric echo	Off
Normalize	Off	Contrasts	1
B1 filter	Off	Bandwidth	260 Hz/Px
Raw filter	Off	Flow comp.	No
Elliptical filter	Off		
•	VIII	RF pulse type	Normal
Seometry		Gradient mode	Fast
Multi-slice mode	Sequential	RF spoiling	On
	Interleaved		
Series		MB Number	1

FOV Shift 1 Distance22 32

\\USER\AMRIT\Liyong\20150821\fl_fq_mb1f1p2_venc90_res256_bottom

TA: 2:04 P	AT: 2 Voxel size: 0.8×0	.8×4.0 mm Rel. SNR: 1.00 L	JSER: fl_fq_mb
Properties		Special sat.	None
Prio Recon	Off	System	
Before measurement		Body	Off
After measurement		HEP	On
Load to viewer	On	HEA	On
Inline movie	Off		
Auto store images	On	Positioning mode	FIX
Load to stamp segments	Off	Table position	Н
Load images to graphic	Off	Table position	0 mm
	Oli	MSMA	S - C - T
segments	0#	Sagittal	R >> L
Auto open inline display	Off	Coronal	A >> P
Start measurement without	On	Transversal	F >> H
further preparation	0"	Coil Combine Mode	Adaptive Combine
Wait for user to start	Off	AutoAlign	
Start measurements	single	Auto Coil Select	Default
Routine		Shim mode	Tune up
Slice group 1		Adjust with body coil	Off
Slices	1	Confirm freq. adjustment	Off
Dist. factor	700 %	Assume Silicone	Off
Position	L0.0 A23.5 F6.6		
Orientation	Transversal	? Ref. amplitude 1H	0.000 V
Phase enc. dir.	A >> P	Adjustment Tolerance	Auto
Rotation	0.00 deg	Adjust volume	
Phase oversampling	0 %	Position	Isocenter .
FoV read	192 mm	Orientation	Transversal
FoV phase	100.0 %	Rotation	0.00 deg
Slice thickness	4.0 mm	R >> L	350 mm
TR	19.10 ms	A >> P	263 mm
TE	5.77 ms	F >> H	350 mm
Averages	1	Physic	
Concatenations	1	Physio	Dules/Trigger
Filter	None	1st Signal/Mode	Pulse/Trigger
Coil elements	HEA;HEP	Average cycle	No Signal ms
Con elements	ПСА,ПСР	Captured cycle	-not set-
Contrast		Acquisition window	870 ms
Flip angle	15 deg	Trigger pulse	1
		Trigger delay	0 ms
Averaging mode	Short term	Segments	1
Reconstruction	Magnitude	Phases	45
Measurements	<u>1</u> .	Angio	
Multiple series	Each measurement	Flow mode	Single dir.
Resolution		Encodings	1
Base resolution	256	Velocity enc.	90 cm/s
Phase resolution	100 %	Direction	Through plane
	Off	Rephased images	
Phase partial Fourier	Off	Magnitude images	On On
Interpolation	OII	Phase images	On On
PAT mode	GRAPPA	rnase illiages	OII
Accel. factor PE	2	Subtract	Off
Ref. lines PE	_ 24	Std-Dev-Sag	Off
Matrix Coil Mode	Auto (Triple)	Std-Dev-Cor	Off
Reference scan mode	Integrated	Std-Dev-Tra	Off
		Std-Dev-Time	Off
Image Filter	Off	MIP-Sag	Off
Distortion Corr.	Off	MIP-Cor	Off
Prescan Normalize	Off	MIP-Tra	Off
Normalize	Off		
B1 filter	Off	MIP-Time	Off
Raw filter	Off	Save original images	On
Elliptical filter	Off	Sequence	
•		Introduction	On
Seometry		Asymmetric echo	Off
Multi-clica moda	Seguential	, 10,1111101110 00110	J.,

Sequential

Interleaved

Multi-slice mode

Series

Contrasts

Bandwidth

260 Hz/Px

Flow comp.	No
RF pulse type	Normal
Gradient mode	Fast
RF spoiling	On
MB Number	1
FOV Shift	1
Distance22	32

TA: 2:04

USER: fl_fq_mb

roperties		Special sat.	None
Prio Recon	Off	System	
Before measurement		Body	Off
After measurement		HEP	On
Load to viewer	On	HEA	On
Inline movie	Off	B 22 1	
Auto store images	On	Positioning mode	FIX
Load to stamp segments	Off	Table position	H
Load images to graphic	Off	Table position	0 mm
segments		MSMA	S - C - T
Auto open inline display	Off	Sagittal	R >> L
Start measurement without	On	Coronal	A >> P
further preparation	011	Transversal	F >> H
Wait for user to start	Off	Coil Combine Mode	Adaptive Combine
Start measurements		AutoAlign	
Start measurements	single	Auto Coil Select	Default
outine		Obies as a de	Т
Slice group 1		Shim mode	Tune up
Slices	1	Adjust with body coil	Off
Dist. factor	700 %	Confirm freq. adjustment	Off
Position	L0.0 A23.5 F6.6	Assume Silicone	Off
Orientation	Transversal	? Ref. amplitude 1H	0.000 V
Phase enc. dir.	A >> P	Adjustment Tolerance	Auto
Rotation	0.00 deg	Adjust volume	
Phase oversampling	0.00 deg 0 %	Position	Isocenter
FoV read	192 mm	Orientation	Transversal
FoV phase	100.0 %	Rotation	0.00 deg
		R >> L	350 mm
Slice thickness	4.0 mm	A >> P	263 mm
TR	19.10 ms	F >> H	350 mm
TE	5.77 ms	ļ	
Averages	1	Physio	
Concatenations	1	1st Signal/Mode	Pulse/Trigger
Filter	None	Average cycle	No Signal ms
Coil elements	HEA;HEP	Captured cycle	-not set-
contrast		Acquisition window	870 ms
Flip angle	15 deg	—— Trigger pulse	1
i iip aiigie		Trigger delay	0 ms
Averaging mode	Short term	Segments	1
Reconstruction	Magnitude	Phases	45
Measurements	1	Α	
Multiple series	Each measurement	Angio	0. 1. 1.
		Flow mode	Single dir.
esolution		Encodings	1
Base resolution	256	Velocity enc.	90 cm/s
Phase resolution	100 %	Direction	Through plane
Phase partial Fourier	Off	Rephased images	On
Interpolation	Off	Magnitude images	On
PAT mode	GRAPPA	Phase images	On
Accel. factor PE	2	Subtract	Off
Ref. lines PE	24		
		Std-Dev-Sag	Off
Matrix Coil Mode	Auto (Triple)	Std-Dev-Cor	Off
Reference scan mode	Integrated	Std-Dev-Tra	Off
Image Filter	Off	Std-Dev-Time	Off
Distortion Corr.	Off	MIP-Sag	Off
Prescan Normalize	Off	MIP-Cor	Off
Normalize	Off	MIP-Tra	Off
B1 filter	Off	MIP-Time	Off
		Save original images	On
Raw filter	Off Off	1	
Elliptical filter	Off	Sequence	0.5
		Introduction	On
eometry		Ι Λ = · · · · · ·	
Geometry Multi-slice mode	Sequential	Asymmetric echo	Off
Geometry Multi-slice mode Series	Sequential Interleaved	Asymmetric echo Contrasts Bandwidth	Off 1 260 Hz/Px

I	Flow comp.	No
	RF pulse type Gradient mode RF spoiling	Normal Fast On
	MB Number FOV Shift Distance22	4 2 32

roperties		Special sat.	None
Prio Recon	Off	System	
Before measurement		Body	Off
After measurement		HEP	On
Load to viewer	On	HEA	On
Inline movie	Off		
Auto store images	On	Positioning mode	FIX
Load to stamp segments	Off	Table position	Н
Load images to graphic	Off	Table position	0 mm
segments		MSMA	S - C - T
Auto open inline display	Off	Sagittal	R >> L
Start measurement without	On	Coronal	A >> P
further preparation		Transversal	F >> H
Wait for user to start	Off	Coil Combine Mode	Adaptive Combine
Start measurements	single	AutoAlign	
	g. :	Auto Coil Select	Default
outine		—— Shim mode	Tune up
Slice group 1		Adjust with body coil	Off
Slices	4	Confirm freq. adjustment	Off
Dist. factor	700 %	Assume Silicone	Off
Position	L0.0 A23.5 H41.4	? Ref. amplitude 1H	0.000 V
Orientation	Transversal	Adjustment Tolerance	Auto
Phase enc. dir.	A >> P	Adjust volume	rato
Rotation	0.00 deg	Position	Isocenter
Phase oversampling	0 %	Orientation	Transversal
FoV read	192 mm	Rotation	0.00 deg
FoV phase	100.0 %	R >> L	350 mm
Slice thickness	4.0 mm	A >> P	263 mm
TR	19.10 ms	F >> H	350 mm
TE	5.77 ms		330 11111
Averages	1	Physio	
Concatenations	4	1st Signal/Mode	None
Filter	None	Segments	1
Coil elements	HEA;HEP	Annia	
ontrast		Angio	Oin ale dia
Flip angle	15 deg	Flow mode	Single dir.
·····arigle	15 deg	Encodings	1
Averaging mode	Short term	Velocity enc.	90 cm/s
Reconstruction	Magnitude	Direction	Through plane
Measurements	1	Rephased images	On
Multiple series	Each measurement	Magnitude images	On
		Phase images	On
esolution	050	—— Subtract	Off
Base resolution	256	Std-Dev-Sag	Off
Phase resolution	100 %	Std-Dev-Cor	Off
Phase partial Fourier	Off	Std-Dev-Tra	Off
Interpolation	Off	Std-Dev-Time	Off
PAT mode	GRAPPA	MIP-Sag	Off
Accel. factor PE	2	MIP-Cor	Off
Ref. lines PE	48	MIP-Tra	Off
Matrix Coil Mode	Auto (Triple)	MIP-Time	Off
Reference scan mode	Integrated	Save original images	On
			OII
Image Filter	Off	Sequence	
Distortion Corr.	Off	Introduction	On
Prescan Normalize	Off	Asymmetric echo	Off
Normalize	Off	Contrasts	1
B1 filter	Off	Bandwidth	260 Hz/Px
Raw filter	Off	Flow comp.	No
Elliptical filter	Off		
•		RF pulse type	Normal
Geometry		Gradient mode	Fast
Multi-slice mode	Sequential	RF spoiling	On
Series	Interleaved		

MB Number

Interleaved

Series

FOV Shift 1 Distance22 32

\\US	ER\AMRIT\Liyong\201508		 6_nav
	AT: 2 Voxel size: 1.2×1.2	•	 JSER: fl_fq_mb
		1 0 :1 :	
Properties		Special sat.	None
Prio Recon	Off	System	
Before measurement		Body	Off
After measurement		NE2	On
Load to viewer	On	NE1	On
Inline movie	Off	HEP	On
Auto store images	On	HEA	On
Load to stamp segments	Off	SP4	On
Load images to graphic	Off	SP2	On
segments		SP8	Off
Auto open inline display	Off	SP6	Off
Start measurement without	On	SP3	On
further preparation		SP1	On
Wait for user to start	Off	SP7	Off
Start measurements	single	SP5	Off
Routine		Positioning mode	FIX
Slice group 1		Table position	Н
Slices	3	Table position	0 mm
Dist. factor	1700 %	MSMA	S - C - T
Position	L0.7 P15.3 H71.3	Sagittal	R >> L
Orientation	Transversal	Coronal	A >> P
Phase enc. dir.	A >> P	Transversal	F >> H
Rotation	0.00 deg	Coil Combine Mode	
Phase oversampling	0.00 deg 0 %	AutoAlign	Adaptive Combine
FoV read	300 mm	Auto Coil Select	Default
	68.8 %	Auto Coil Select	Delauit
FoV phase		Shim mode	Tune up
Slice thickness	3.0 mm	Adjust with body coil	Off .
TR	17.50 ms	Confirm freq. adjustment	Off
TE	5 ms	Assume Silicone	Off
Averages	1	? Ref. amplitude 1H	0.000 V
Concatenations	3	Adjustment Tolerance	Auto
Filter	None	Adjust volume	7.000
Coil elements	HEA;HEP;NE1,2;SP1-4	Position	Isocenter
Contrast		Orientation	Transversal
Flip angle	15 deg	Rotation	0.00 deg
		- R >> L	350 mm
Averaging mode	Short term	A >> P	263 mm
Reconstruction	Magnitude	F >> H	350 mm
Measurements	1	1 >> 11	330 11111
Multiple series	Each measurement	Physio	
Resolution		1st Signal/Mode	None
Base resolution	256	— Segments	1
Phase resolution	100 %	Angio	
Phase resolution Phase partial Fourier	Off	Flow mode	Single dir.
Interpolation	Off	Encodings	1
	·····	Velocity enc.	90 cm/s
PAT mode	GRAPPA	Direction	Through plane
Accel. factor PE	2	Rephased images	On
Ref. lines PE	48		On On
Matrix Coil Mode	Triple	Magnitude images	
Reference scan mode	Integrated	Phase images	On
Imaga Citer		Subtract	Off
Image Filter	Off	Std-Dev-Sag	Off
Distortion Corr.	Off	Std-Dev-Cor	Off
Prescan Normalize	Off	Std-Dev-Tra	Off
Normalize	Off	Std-Dev-Time	Off
B1 filter	Off	MIP-Sag	Off
Raw filter	Off	MIP-Cor	Off
Elliptical filter	Off	MIP-Tra	Off
Geometry		MIP-Time	Off
Multi-slice mode	Sequential	Save original images	On
Series	Interleaved	- Caro original images	5

Sequence

Interleaved

Series

Introduction Asymmetric echo Contrasts Bandwidth	On Off 1 260 Hz/Px
Flow comp. RF pulse type Gradient mode RF spoiling	No Normal Fast On
MB Number FOV Shift Distance22	1 1 32

\\USER\AMRIT\Liyong\20150821\fl_fq_mb3f3p1_venc90_res256_new					
	T: Off Voxel size: 1.2×1.2×	•	USER: fl_fq_mb		
	NE2 On				
Properties		- NE1	On		
Prio Recon	Off	HEP	On		
Before measurement		HEA	On		
After measurement		SP4	On		
Load to viewer	On	SP2	On		
Inline movie	Off	SP8	Off		
Auto store images	On	SP6	Off		
Load to stamp segments	Off	SP3	On		
Load images to graphic	Off	SP1	_		
segments			On		
Auto open inline display	Off	SP7	Off		
Start measurement without	On	SP5	Off		
further preparation	.	Positioning mode	FIX		
Wait for user to start	Off	Table position	Н		
Start measurements	single	Table position	0 mm		
Ctart measurements	Single	MSMA	S - C - T		
Routine			R >> L		
Slice group 1		Sagittal			
Slices	1	Coronal	A >> P		
Dist. factor	1700 %	Transversal	F >> H		
Position	L0.7 P15.3 H17.3	Coil Combine Mode	Adaptive Combine		
Orientation	Transversal	AutoAlign			
Phase enc. dir.	A >> P	Auto Coil Select	Default		
Rotation	0.00 deg	Shim mode	Tune up		
	0.00 deg 0 %		Off		
Phase oversampling		Adjust with body coil			
FoV read	300 mm	Confirm freq. adjustment	Off		
FoV phase	68.8 %	Assume Silicone	Off		
Slice thickness	3.0 mm	? Ref. amplitude 1H	0.000 V		
TR	17.50 ms	Adjustment Tolerance	Auto		
TE	5 ms	Adjust volume			
Averages	1	Position	Isocenter		
Concatenations	1	Orientation	Transversal		
Filter	None	Rotation	0.00 deg		
Coil elements	HEA;HEP;NE1,2;SP1-4	R >> L	350 mm		
Contrast		A >> P	263 mm		
	45 days	- F >> H	350 mm		
Flip angle	15 deg	Dharaia			
Averaging mode	Short term	Physio	D. 1. /T.:		
Reconstruction	Magnitude	1st Signal/Mode	Pulse/Trigger		
Measurements	1	Average cycle	No Signal ms		
Multiple series	Each measurement	Captured cycle	-not set-		
Walapio comoo	Edon mododromont	Acquisition window	870 ms		
Resolution		Trigger pulse	1		
Base resolution	256	Trigger delay	0 ms		
Phase resolution	100 %	Segments	1		
Phase partial Fourier	Off	Phases	49		
Interpolation	Off	Angia			
		Angio	C: 1 !:		
PAT mode	None	Flow mode	Single dir.		
Matrix Coil Mode	Triple	Encodings	1		
Image Filter	Off	Velocity enc.	90 cm/s		
Distortion Corr.	Off	Direction	Through plane		
Prescan Normalize	_	Rephased images	On		
	Off	Magnitude images	On		
Normalize	Off	Phase images	On		
B1 filter	Off	Cubtract	O#		
Raw filter	Off	Subtract	Off		
Elliptical filter	Off	Std-Dev-Sag	Off		
Geometry		Std-Dev-Cor	Off		
Multi-slice mode	Sequential	Std-Dev-Tra	Off		
	•	Std-Dev-Time	Off		
Series	Interleaved	MIP-Sag	Off		
Special sat.	None	MIP-Cor	Off		
1		MIP-Tra	Off		
System		MIP-Time	Off		
Body	Off				

	Save original images	On		
Sequence				
ĺ	Introduction	On		
	Asymmetric echo	Off		
	Contrasts	1		
	Bandwidth	260 Hz/Px		
	Flow comp.	No		
	RF pulse type	Normal		
	Gradient mode	Fast		
	RF spoiling	On		
	MB Number	3		
	FOV Shift	3		
	Distance22	54		

\\USER\AMRIT\Liyong\20150821\fl_fq_mb3_venc90_res256_nav PAT: 2 Voxel size: 1.0×1.0×4.0 mm Rel. SNR: 1.00 USER: f

TA: 0:12

USER: fl_fq_mb

TA. U.12	AT. 2 VOXELSIZE. I.UXT.U.	x4.0 IIIII Rei. SINR. 1.00 C	JOEK. II_IQ_IIID
Properties		Special sat.	None
Prio Recon	Off	System	
Before measurement		Body	Off
After measurement		NE2	On
Load to viewer	On	NE1	On
Inline movie	Off	HEP	On
Auto store images	On	HEA	On
Load to stamp segments	Off	SP4	On
Load images to graphic	Off	SP2	On
segments		SP8	Off
Auto open inline display	Off	SP6	Off
Start measurement without	On	SP3	On
further preparation		SP1	On
Wait for user to start	Off	SP7	Off
Start measurements	single	SP5	Off
ı	Single		
Routine		Positioning mode	FIX
Slice group 1		Table position	Н
Slices	3	Table position	0 mm
Dist. factor	2200 %	MSMA	S - C - T
Position	L5.9 P15.3 H19.8	Sagittal	R >> L
Orientation	Transversal	Coronal	A >> P
Phase enc. dir.	A >> P	Transversal	F >> H
Rotation	0.00 deg	Coil Combine Mode	Adaptive Combine
Phase oversampling	0 %	AutoAlign	
FoV read	256 mm	Auto Coil Select	Default
FoV phase	100.0 %		<u>-</u>
Slice thickness	4.0 mm	Shim mode	Tune up
TR	19.10 ms	Adjust with body coil	Off
TE	5.77 ms	Confirm freq. adjustment	Off
Averages	1	Assume Silicone	Off
Concatenations	3	? Ref. amplitude 1H	0.000 V
Filter	None	Adjustment Tolerance	Auto
Coil elements	HEA;HEP;NE1,2;SP1-4	Adjust volume	
Oon cicinents	11277,1121 ,1421,2,01 1 4	Position	Isocenter
Contrast		Orientation	Transversal
Flip angle	15 deg	Rotation	0.00 deg
Averaging mode	Short term	R >> L	350 mm
Reconstruction		A >> P	263 mm
	Magnitude	F >> H	350 mm
Measurements	Foot maggirement	Physio	
Multiple series	Each measurement	1st Signal/Mode	None
Resolution		Segments	None 1
Base resolution	256	— Segments	ı
Phase resolution	100 %	Angio	
Phase partial Fourier	Off	Flow mode	Single dir.
Interpolation	Off	Encodings	1
	CD A DD A	Velocity enc.	90 cm/s
PAT mode	GRAPPA	Direction	Through plane
Accel. factor PE	2	Rephased images	On
Ref. lines PE	48	Magnitude images	On
Matrix Coil Mode	Triple	Phase images	On
Reference scan mode	Integrated		
Image Filter	Off	Subtract	Off
Distortion Corr.	Off	Std-Dev-Sag	Off
Prescan Normalize	Off	Std-Dev-Cor	Off
Normalize	Off	Std-Dev-Tra	Off
B1 filter	Off	Std-Dev-Time	Off
Raw filter	Off	MIP-Sag	Off
Elliptical filter	Off	MIP-Cor	Off
Liliptical filter	Oil	MIP-Tra	Off
Geometry		MIP-Time	Off
Multi-slice mode	Sequential	Save original images	On
Series	Interleaved	Seguence	
		Sequence	

Introduction Asymmetric echo Contrasts Bandwidth Flow comp.	On Off 1 260 Hz/Px No
RF pulse type Gradient mode RF spoiling	Normal Fast On
MB Number FOV Shift Distance22	1 1 32

\\USER\AMRIT\Liyong\20150821\fl_fq_mb3f3p1_venc90_res256_pre					
	T: Off Voxel size: 1.0×1.0×4	·	USER: fl_fq_mb		
	NE2 On				
Properties		NE1	On		
Prio Recon	Off	HEP	On		
Before measurement		HEA	On		
After measurement	_	SP4	On		
Load to viewer	On	SP2	On		
Inline movie	Off	SP8	Off		
Auto store images	On O"	SP6	Off		
Load to stamp segments	Off	SP3	On		
Load images to graphic	Off	SP1	On		
segments	0#	SP7	Off		
Auto open inline display	Off	SP5	Off		
Start measurement without	On	Docitioning mode	FIX		
further preparation Wait for user to start	Off	Positioning mode	H		
Start measurements		Table position Table position	0 mm		
Start measurements	single	MSMA	S - C - T		
Routine			R >> L		
Slice group 1		Sagittal Coronal	A >> P		
Slices	1	Transversal	A >> P F >> H		
Dist. factor	700 %	Coil Combine Mode	г >> п Adaptive Combine		
Position	L5.9 P15.3 F70.2	AutoAlign			
Orientation	Transversal	Auto Coil Select	Default		
Phase enc. dir.	A >> P	Auto Coil Select			
Rotation	0.00 deg	Shim mode	Tune up		
Phase oversampling	0 %	Adjust with body coil	Off		
FoV read	256 mm	Confirm freq. adjustment	Off		
FoV phase	100.0 %	Assume Silicone	Off		
Slice thickness	4.0 mm	? Ref. amplitude 1H	0.000 V		
TR	19.10 ms	Adjustment Tolerance	Auto		
TE	5.77 ms	Adjust volume			
Averages	1	Position	Isocenter		
Concatenations	1	Orientation	Transversal		
Filter	None	Rotation	0.00 deg		
Coil elements	HEA;HEP;NE1,2;SP1-4	R >> L	350 mm		
Contrast		A >> P	263 mm		
Flip angle	15 deg	F >> H	350 mm		
	01 44	Physio			
Averaging mode	Short term	1st Signal/Mode	Pulse/Trigger		
Reconstruction	Magnitude	Average cycle	No Signal ms		
Measurements	Took management	Captured cycle	-not set-		
Multiple series	Each measurement	Acquisition window	870 ms		
Resolution		Trigger pulse	1		
Base resolution	256	Trigger delay	0 ms		
Phase resolution	100 %	Segments	1		
Phase partial Fourier	Off	Phases	45		
Interpolation	Off	Angio			
PAT mode	None	Flow mode	Single dir.		
Matrix Coil Mode	Triple	Encodings	1		
······	Tiple	Velocity enc.	90 cm/s		
Image Filter	Off	Direction	Through plane		
Distortion Corr.	Off	Rephased images	On		
Prescan Normalize	Off	Magnitude images	On		
Normalize	Off	Phase images	On		
B1 filter	Off				
Raw filter	Off	Subtract	Off		
Elliptical filter	Off	Std-Dev-Sag	Off		
Geometry		Std-Dev-Cor	Off		
Multi-slice mode	Sequential	Std-Dev-Tra	Off		
Series	Interleaved	Std-Dev-Time	Off		
		MIP-Sag	Off		
Special sat.	None	MIP-Cor	Off		
System		MIP-Tra	Off		
Body	Off	MIP-Time	Off		
1 200,					

Save original images	On
Sequence	
Introduction	On
Asymmetric echo	Off
Contrasts	1
Bandwidth	260 Hz/Px
Flow comp.	No
RF pulse type	Normal
Gradient mode	Fast
RF spoiling	On
MB Number	3
FOV Shift	3
Distance22	92
1	

 $\label{local_loc$

Rel. SNR: 1.00

USER: pgrs3d_seg_asl_MB

Voxel size: 4.0×4.0×3.0 mm

PAT: Off

TA: 1:04

Properties		Matrix Coil Mode	Auto (CP)
Prio Recon	Off	Raw filter	Off
Before measurement		Geometry	
After measurement	_	Series	Ascending
Load to viewer	On O"		······
Inline movie	Off	Sat. region 1	
Auto store images	On O#	Thickness	72 mm
Load to stamp segments Load images to graphic	Off Off	Position	L7.3 A4.8 H63.6
segments	Oii	Orientation	Transversal
Auto open inline display	Off	Special sat.	None
Start measurement without	On	System	
further preparation		Body	Off
Wait for user to start	Off	HEP	On
Start measurements	single	HEA	On
Routine	•	Positioning mode	REF
		Table position	H
Slab group 1 Slabs	3	Table position	0 mm
Dist. factor	3 0 %	MSMA	S - C - T
Position	L7.3 A4.8 H63.6	Sagittal	R >> L
Orientation	Transversal	Coronal	A >> P
Phase enc. dir.	A >> P	Transversal	F >> H
Rotation	0.00 deg	Save uncombined	Off
Phase oversampling	0 %	Coil Combine Mode	Adaptive Combine
Slice oversampling	25.0 %	AutoAlign	
Slices per slab	8	Auto Coil Select	Default
FoV read	256 mm	Shim mode	Standard
FoV phase	100.0 %	Adjust with body coil	Off
Slice thickness	3.0 mm	Confirm freq. adjustment	Off
TR	8000 ms	Assume Silicone	Off
TE	32.12 ms	? Ref. amplitude 1H	0.000 V
Averages	1	Adjustment Tolerance	Auto
Concatenations	1	Adjust volume	
Filter	None	Position	L7.3 A4.8 H63.6
Coil elements	HEA;HEP	Orientation	Transversal
Contrast		Rotation	0.00 deg
Flip angle	180 deg		256 mm 256 mm
Fat suppr.	Fat sat.	F >> H	72 mm
Fat sat. mode	Strong	I	72 111111
Averaging mode	Long term	Physio	
Reconstruction	Magnitude	1st Signal/Mode	None
Measurements	12	Segments	1
Pause after meas. 1	0.0 s	Sequence	
Pause after meas. 2	0.0 s	Introduction	Off
Pause after meas. 3	0.0 s	Dimension	3D
Pause after meas. 4	0.0 s	Reordering	Centric
Pause after meas. 5	0.0 s	Contrasts	1
Pause after meas. 6	0.0 s	Bandwidth	2790 Hz/Px
Pause after meas. 7	0.0 s	Echo spacing	0.4 ms
Pause after meas. 8	0.0 s	Turbo factor	10
Pause after meas. 9	0.0 s	EPI factor	65
Pause after meas. 10 Pause after meas. 11	0.0 s 0.0 s	RF pulse type	Normal
Multiple series	Each measurement	Gradient mode	Fast
•	Lacii ineasurement		
Resolution		Background Suppr.	Off
Base resolution	64	Suppress arteries	0 s/mm2
Phase resolution	100 %	Start of time series	2000 ms
Slice resolution	100 %	Increment time series	250 ms
Slice partial Fourier	Off	Length of time series Use adaptive TR	1 ms Off
Interpolation	Off	MB Number	3
			J

Additional Echo Time	0
Post sat	Off
Q2TIPS duration	200 ms
BS parameter[1]	500 ms
BS parameter[2]	10 ms
BS parameter[3]	0 ms
FOCI parameter[1]	800
FOCI parameter[2]	24
FOCI parameter[3]	1.0
FOCI parameter[4]	2000
Ref Scan(1)	1

 $\verb|\USER\AMRIT\>| Liyong \end{|} 20150821 \end{|} pgrs3d_seg_asl_MB_ref0_f4z_tr3s_bs$

TA: 2:24 PAT: Off	Voxel size: 4.0×4.0×3	3.0 mm Rel. SNR: 1.00 USER	t: pgrs3d_seg_asl_MB
Normantia -		Pause after meas. 21	0.0 s
roperties		Pause after meas. 22	0.0 s
Prio Recon	Off	Pause after meas. 23	0.0 s
Before measurement		Multiple series	Each measurement
After measurement	On	Resolution	
Load to viewer Inline movie	On Off	Base resolution	64
Auto store images	On	Phase resolution	100 %
Load to stamp segments	Off	Slice resolution	100 %
Load images to graphic	Off	Slice partial Fourier	Off
segments	3. 1	Interpolation	Off
Auto open inline display	Off		
Start measurement without	On	PAT mode	None
further preparation		Matrix Coil Mode	Auto (CP)
Wait for user to start	Off	Raw filter	Off
Start measurements	single		
outine		Geometry Series	Ascending
Slab group 1			······
Slabs	3	Sat. region 1	70
Dist. factor	0 %	Thickness Position	72 mm L7.3 A4.8 H63.6
Position	L7.3 A4.8 H63.6	Orientation	Transversal
Orientation	Transversal	Special sat.	None
Phase enc. dir.	A >> P	Special sat.	None
Rotation	0.00 deg	System	
Phase oversampling	0 %	Body	Off
Slice oversampling	25.0 %	HEP	On
Slices per slab	8	HEA	On
FoV read	256 mm	Positioning mode	FIX
FoV phase	100.0 %	Table position	H
Slice thickness	3.0 mm	Table position	0 mm
TR	3000 ms	MSMA	S - C - T
TE	32.12 ms	Sagittal	R >> L
Averages Concatenations	1 1	Coronal	A >> P
Filter	None	Transversal	F >> H
Coil elements	HEA:HEP	Save uncombined	Off
Con Cicinoms	11273,1121	Coil Combine Mode	Adaptive Combine
ontrast		AutoAlign	
Flip angle	180 deg	Auto Coil Select	Default
Fat suppr.	Fat sat.	Shim mode	Standard
Fat sat. mode	Strong	Adjust with body coil	Off
Averaging mode	Long term	Confirm freq. adjustment	Off
Reconstruction	Magnitude	Assume Silicone	Off
Measurements	24	? Ref. amplitude 1H	0.000 V
Pause after meas. 1	0.0 s	Adjustment Tolerance	Auto
Pause after meas. 2	0.0 s	Adjust volume	
Pause after meas. 3	0.0 s	Position	L7.3 A4.8 H63.6
Pause after meas. 4	0.0 s	Orientation	Transversal
Pause after meas. 5	0.0 s	Rotation	0.00 deg
Pause after meas. 6	0.0 s	R >> L	256 mm
Pause after meas. 7	0.0 s	A >> P	256 mm
Pause after meas. 8	0.0 s	F >> H	72 mm
Pause after meas. 9	0.0 s	Physio	
Pause after meas. 10	0.0 s	1st Signal/Mode	None
Pause after meas. 11	0.0 s	Segments	none 1
Pause after meas. 12	0.0 s	Jeginents	1
Pause after meas. 13	0.0 s	Sequence	
Pause after meas. 14	0.0 s	Introduction	Off
Pause after meas. 15	0.0 s	Dimension	3D
Pause after meas. 16	0.0 s	Reordering	Centric
Pause after meas. 17	0.0 s	Contrasts	1
Pause after meas. 18	0.0 s	Bandwidth	2790 Hz/Px
Pause after meas. 19	0.0 s	Echo spacing	0.4 ms
Pause after meas. 20	0.0 s		

Turbo factor EPI factor RF pulse type Gradient mode	10 65 Normal Fast
Background Suppr. Suppress arteries Start of time series Increment time series Length of time series Use adaptive TR MB Number Number of echoes Additional Echo Time Post sat Q2TIPS duration BS parameter[1] BS parameter[2] BS parameter[3] FOCI parameter[1] FOCI parameter[3] FOCI parameter[4] Ref Scan(1)	Off 0 s/mm2 600 ms 250 ms 1 ms Off 3 1 0 Off 200 ms 500 ms 10 ms 0 ms 800 24 1.0 2000 0

 $\verb|\USER\AMRIT\>| Liyong \end{|} 20150821 \end{|} pgrs3d_seg_asl_MB_ref0_f4z_tr3s_bs$

TA: 2:24 PAT: Off	f Voxel size: 4.0×4.0×3	3.0 mm Rel. SNR: 1.00 USER	: pgrs3d_seg_asl_MB
		Pause after meas. 21	0.0 s
Properties		Pause after meas. 22	0.0 s
Prio Recon	Off	Pause after meas. 23	0.0 s
Before measurement		Multiple series	Each measurement
After measurement	0	1	
Load to viewer	On Off	Resolution	0.4
Inline movie	Off	Base resolution	64
Auto store images	On O"	Phase resolution	100 %
Load to stamp segments	Off	Slice resolution	100 %
Load images to graphic	Off	Slice partial Fourier	Off
segments	0"	Interpolation	Off
Auto open inline display	Off	PAT mode	None
Start measurement without	On	Matrix Coil Mode	Auto (CP)
further preparation	Off	B 64	
Wait for user to start Start measurements		Raw filter	Off
Start measurements	single	Geometry	
outine		Series	Ascending
Slab group 1		Sat region 1	
Slabs	1	Sat. region 1 Thickness	72 mm
Dist. factor	0 %	Position	72 mm L7.3 A4.8 H63.6
Position	L7.3 A4.8 H63.6	Orientation	Transversal
Orientation	Transversal	Special sat.	None
Phase enc. dir.	A >> P	Special Sat.	NOHE
Rotation	0.00 deg	System	
Phase oversampling	0 %	Body	Off
Slice oversampling	25.0 %	HEP	On
Slices per slab	24	HEA	On
FoV read	256 mm	Desitioning and de	FIV
FoV phase	100.0 %	Positioning mode	FIX
Slice thickness	3.0 mm	Table position	Н
TR	3000 ms	Table position	0 mm
TE	32.12 ms	MSMA	S-C-T
Averages	1	Sagittal	R >> L
Concatenations	1	Coronal	A >> P
Filter	None	Transversal	F >> H
Coil elements	HEA;HEP	Save uncombined	Off
contrast		Coil Combine Mode	Adaptive Combine
Flip angle	180 deg	AutoAlign	Default
Fat suppr.	Fat sat.	Auto Coil Select	Default
Fat sat. mode	Strong	Shim mode	Standard
		Adjust with body coil	Off
Averaging mode	Long term	Confirm freq. adjustment	Off
Reconstruction	Magnitude	Assume Silicone	Off
Measurements	24	? Ref. amplitude 1H	0.000 V
Pause after meas. 1	0.0 s	Adjustment Tolerance	Auto
Pause after meas. 2	0.0 s	Adjust volume	
Pause after meas. 3	0.0 s	Position	L7.3 A4.8 H63.6
Pause after meas. 4	0.0 s	Orientation	Transversal
Pause after meas. 5	0.0 s	Rotation	0.00 deg
Pause after meas. 6	0.0 s	R >> L	256 mm
Pause after meas. 7	0.0 s	A >> P	256 mm
Pause after meas. 8	0.0 s	F >> H	72 mm
Pause after meas. 9	0.0 s	ı	
Pause after meas. 10	0.0 s	Physio	N
Pause after meas. 11	0.0 s	1st Signal/Mode	None
Pause after meas. 12	0.0 s	Segments	1
Pause after meas. 13	0.0 s	Sequence	
Pause after meas. 14	0.0 s	Introduction	Off
Pause after meas. 15	0.0 s	Dimension	3D
Pause after meas. 16	0.0 s	Reordering	Centric
Pause after meas. 17	0.0 s	Contrasts	1
Pause after meas. 18	0.0 s	Bandwidth	2790 Hz/Px
Pause after meas. 19	0.0 s	Echo spacing	0.4 ms
Pause after meas. 20	0.0 s	spacing	
Pause after meas. 20	0.0 s		

Turbo factor EPI factor RF pulse type Gradient mode	30 65 Normal Fast
Background Suppr. Suppress arteries Start of time series Increment time series Length of time series Use adaptive TR MB Number Number of echoes Additional Echo Time Post sat Q2TIPS duration BS parameter[1] BS parameter[2] BS parameter[3] FOCI parameter[2] FOCI parameter[3] FOCI parameter[4] Ref Scan(1)	Off 0 s/mm2 600 ms 250 ms 1 ms Off 1 1 0 Off 200 ms 500 ms 10 ms 0 ms 800 24 1.0 2000 0

\\USER\AMRIT\Liyong\20150821\localizer

TA: 0:13 PAT: Off Voxel size: 1.1×1.0×7.0 mm Rel. SNR: 1.00 SIEMENS: gre			
Description		Phase resolution	90 %
Properties	0"	Phase partial Fourier	Off
Prio Recon	Off	Interpolation	On
Before measurement After measurement		PAT mode	None
Load to viewer	On	Matrix Coil Mode	Auto (CP)
Inline movie	Off	······································	
Auto store images	On	Image Filter	Off
Load to stamp segments	Off	Distortion Corr.	Off
Load images to graphic	Off	Unfiltered images	Off
segments		Prescan Normalize	On O"
Auto open inline display	Off	Normalize B1 filter	Off Off
Start measurement without	Off	Raw filter	Off
further preparation		Elliptical filter	On
Wait for user to start	Off	Mode	Inplane
Start measurements	single	ļ	Прапе
Routine		Geometry	
Slice group 1		- Multi-slice mode	Sequential
Slices	1	Series	Interleaved
Dist. factor	20 %	Saturation mode	Standard
Position	Isocenter	Special sat.	None
Orientation	Sagittal		
Phase enc. dir.	A >> P	Tim CT mode	Off
Rotation	0.00 deg	System	
Slice group 2		Body	Off
Slices	1	NE2	On
Dist. factor Position	20 %	NE1	On
Orientation	Isocenter Transversal	HEP	Off
Phase enc. dir.	A >> P	HEA	Off
Rotation	0.00 deg	SP4	Off
Slice group 3	0.00 dog	SP2	On
Slices	1	SP8	Off
Dist. factor	20 %	SP6	Off
Position	Isocenter	SP3	Off
Orientation	Coronal	SP1	On
Phase enc. dir.	R >> L	SP7	Off
Rotation	0.00 deg	SP5	Off
Phase oversampling	0 %	Positioning mode	REF
FoV read	250 mm	Table position	Н
FoV phase	100.0 %	Table position	0 mm
Slice thickness	7.0 mm	MSMA	S - C - T
TR TE	8.6 ms 4.00 ms	Sagittal	R >> L
Averages	2	Coronal	A >> P
Concatenations	3	Transversal	F >> H
Filter	Prescan Normalize, Elliptical	Save uncombined	Off
	filter	Coil Combine Mode	Adaptive Combine
Coil elements	NE1,2;SP1,2	AutoAlign Auto Coil Select	 Default
Contrast			
TD	0 ms	Shim mode Adjust with body coil	Tune up Off
MTC	Off	Confirm freq. adjustment	Off
Magn. preparation	None	Assume Silicone	Off
Flip angle	20 deg	? Ref. amplitude 1H	0.000 V
Fat suppr.	None	Adjustment Tolerance	Auto
Water suppr.	None	Adjust volume	
Averaging mode	Short term	Position	Isocenter
Reconstruction	Magnitude	Orientation	Transversal
Measurements	1	Rotation	0.00 deg
Multiple series	Each measurement	R >> L	350 mm
		A >> P	263 mm
Resolution	256	_ F >> H	350 mm
Base resolution	256	Physio	
		99/+	

1st Signal/Mode Segments	None 1
Dark blood	Off
Resp. control	Off
Inline	
Subtract	Off
Liver registration	Off
Std-Dev-Sag	Off
Std-Dev-Cor	Off
Std-Dev-Tra	Off
Std-Dev-Time	Off
MIP-Sag	Off
MIP-Cor	Off
MIP-Tra	Off
MIP-Time	Off
Save original images	On
Wash - In	Off
Wash - Out	Off
TTP	Off
PEI	Off
MIP - time	Off
Sequence	
Introduction	On
Dimension	2D
Phase stabilisation	Off
Asymmetric echo	Allowed
Contrasts	1
Bandwidth	320 Hz/Px
Flow comp.	No
Allowed delay	0 s
RF pulse type	Normal
Gradient mode	Normal
Excitation	Slice-sel.
RF spoiling	On

\\USER\AMRIT\Liyong\20150821\trufi_singleshot_15sl_iPAT

		8×6.0 mm Rel. SNR: 1.00	SIEMENS: CV
		Normalize	Off
Properties		B1 filter	Off
Prio Recon	Off	Raw filter	Off
Before measurement		Elliptical filter	Off
After measurement		POCS	Off
Load to viewer	On		
Inline movie	Off	Geometry	
Auto store images	On	Multi-slice mode	Sequential
Load to stamp segments	On	Series	Descending
Load images to graphic	On	Special sat.	None
segments			
Auto open inline display	Off	System	
Start measurement without	On	Body	Off
further preparation		NE2	On
Wait for user to start	On 	NE1	On
Start measurements	single	HEP	On
Routine		HEA	On
Slice group 1		SP4	On
Slices	25	SP2	On
Dist. factor	30 %	SP8	Off
Position	L2.8 P6.7 F0.6	SP6	Off
Orientation	Coronal	SP3	On
Phase enc. dir.	R >> L	SP1	On
Rotation	0.00 deg	SP7	Off
Auto	On	SP5	Off
Phase oversampling	0 %		
FoV read	340 mm	Positioning mode	REF
FoV phase	75.0 %	Table position	Н
Slice thickness	6.0 mm	Table position	0 mm
TR	258.52 ms	MSMA	S - C - T
TE	1.23 ms	Sagittal	R >> L
Averages	1	Coronal	A >> P
Concatenations	25	Transversal	F >> H
Filter	Distortion Corr.(2D)	Save uncombined	Off
Coil elements	HEA;HEP;NE1,2;SP1-4	Coil Combine Mode	Adaptive Combine
1	11274,1121 ,142 1,2,31	AutoAlign	
Contrast		Auto Coil Select	Default
TD	0 ms	Shim mode	Tune up
Magn. preparation	None	Adjust with body coil	Off
Flip angle	51 deg	Confirm freq. adjustment	Off
Fat suppr.	None	Assume Silicone	Off
Restore magn.	On	? Ref. amplitude 1H	0.000 V
Averaging mode	Short term	Adjustment Tolerance	Auto
Reconstruction	Magnitude	Adjust volume	Auto
Measurements	1	Position	Isocenter
Multiple series	Each measurement	Orientation	Transversal
	_aon moadaroment	Rotation	0.00 deg
Resolution		— Rotation	350 mm
Base resolution	256	—	263 mm
Phase resolution	66 %	F >> H	350 mm
Phase partial Fourier	Off	F >> Π	330 IIIII
Trajectory	Cartesian	Physio	
Interpolation	Off	1st Signal/Mode	Pulse/Trigger
PAT mode	GRAPPA	Average cycle	No Signal ms
Accel, factor PE	GRAPPA 2	Captured cycle	-not set-
Ref. lines PE	26	Acquisition window	710 ms
		Trigger pulse	1
Matrix Coil Mode	Dual	Trigger delay	400 ms
Reference scan mode	Integrated	Segments	76
Image Filter	Off	Phases	1
Distortion Corr.	On		
Mode	2D	Dark blood	Off
Unfiltered images	Off	Cine	Off
Prescan Normalize	Off	Resp. control	Off
1			

Inline

Subtract	Off	
Std-Dev-Sag	Off	
Std-Dev-Cor	Off	
Std-Dev-Tra	Off	
Std-Dev-Time	Off	
MIP-Sag	Off	
MIP-Cor	Off	
MIP-Tra	Off	
MIP-Time	Off	
Save original images	On	

Sequence

	Sequence		
I	Introduction	Off	
	Dimension	2D	
	Reordering	Linear	
	Asymmetric echo	Allowed	
	Bandwidth	849 Hz/Px	
	Optimization	Min. TE TR	
	Allowed delay	3 s	
	Echo spacing	2.9 ms	
ı	Sequence type	Trufi	
ı	2040000 1) PO	Tran	
	Define	Shots	
	Define	Shots	
	Define Shots per slice	Shots 1	
	Define Shots per slice Trufi delta freq.	Shots 1 0 Hz	
	Define Shots per slice Trufi delta freq. RF pulse type	Shots 1 0 Hz Fast	
	Define Shots per slice Trufi delta freq. RF pulse type Gradient mode	Shots 1 0 Hz Fast Fast	

\\USER\AMRIT\Liyong\20150821\trufi_singleshot_15sl_iPAT

N		Normalize	Off
roperties		B1 filter	Off
Prio Recon	Off	Raw filter	Off
Before measurement		Elliptical filter	Off
After measurement	_	POCS	Off
Load to viewer	On	ļ	
Inline movie	Off	Geometry	
Auto store images	On	Multi-slice mode	Sequential
Load to stamp segments	On	Series	Descending
Load images to graphic	On	Special sat.	None
segments		Special Sat.	
Auto open inline display	Off	Octobra ma	
Start measurement without	On	System	0"
further preparation		Body	Off
Wait for user to start	On	NE2	On
Start measurements	single	NE1	On
		HEP	On
outine		HEA	On
Slice group 1	0.5	SP4	On
Slices	35	SP2	On
Dist. factor	30 %	SP8	Off
Position	L0.0 A5.8 F0.6	SP6	Off
Orientation	Transversal	SP3	On
Phase enc. dir.	A >> P	SP1	On
Rotation	0 deg	SP7	Off
Auto	On	SP5	Off
Phase oversampling	0 %	Desitioning and	DEE
FoV read	340 mm	Positioning mode	REF
FoV phase	75.0 %	Table position	H
Slice thickness	6.0 mm	Table position	0 mm
TR	258.52 ms	MSMA	S - C - T
TE	1.23 ms	Sagittal	R >> L
Averages	1	Coronal	A >> P
Concatenations	35	Transversal	F >> H
Filter	Distortion Corr.(2D)	Save uncombined	Off
Coil elements	HEA;HEP;NE1,2;SP1-4	Coil Combine Mode	Adaptive Combine
	, , , , -	AutoAlign	
Contrast		Auto Coil Select	Default
TD	0 ms	Shim mode	Tune up
Magn. preparation	None	Adjust with body coil	Off
Flip angle	51 deg	Confirm freq. adjustment	Off
Fat suppr.	None	Assume Silicone	Off
Restore magn.	On	? Ref. amplitude 1H	0.000 V
Averaging mode	Short term	Adjustment Tolerance	Auto
Reconstruction	Magnitude	Adjust volume	Auto
Measurements	1	Position	Isocenter
Multiple series	Each measurement	Orientation	Transversal
•	Laon measurement	Rotation	
esolution			0.00 deg
Base resolution	256	— R >> L	350 mm
Phase resolution	66 %	A >> P	263 mm
Phase partial Fourier	Off	F >> H	350 mm
Trajectory	Cartesian	Physio	
Interpolation	Off	1st Signal/Mode	Pulse/Trigger
		Average cycle	No Signal ms
PAT mode	GRAPPA	Captured cycle	-not set-
Accel. factor PE	2	Acquisition window	710 ms
Ref. lines PE	26	Trigger pulse	1
Matrix Coil Mode	Dual	Trigger pulse Trigger delay	400 ms
Reference scan mode	Integrated		
Imaga Filtar	Off	Segments	76 1
Image Filter	Off	Phases	1
Distortion Corr.	On	Dark blood	Off
Mode	2D		-
		l Cine	Off
Unfiltered images Prescan Normalize	Off Off	Resp. control	Off

Inline

Subtract	Off	
Std-Dev-Sag	Off	
Std-Dev-Cor	Off	
Std-Dev-Tra	Off	
Std-Dev-Time	Off	
MIP-Sag	Off	
MIP-Cor	Off	
MIP-Tra	Off	
MIP-Time	Off	
Save original images	On	

Sequence

Off
2D
Linear
Allowed
849 Hz/Px
Min. TE TR
3 s
2.9 ms
Trufi
Shots
1
0 Hz
Fast
Fast
Slice-sel.
Constant

\\USER\AMRIT\Liyong\20150821\fl_fq_mb3_greX_nav

roportion		NE2	On
roperties		NE1	On
Prio Recon	Off	HEP	On
Before measurement		HEA	On
After measurement		SP4	On
Load to viewer	On	SP2	On
Inline movie	Off	SP8	Off
Auto store images	On	SP6	Off
Load to stamp segments	Off	SP3	On
Load images to graphic	Off		_
segments		SP1	On
Auto open inline display	Off	SP7	Off
Start measurement without	On	SP5	Off
	Oli	Positioning mode	FIX
further preparation	0#		
Wait for user to start	Off	Table position	H
Start measurements	single	Table position	0 mm
outine		MSMA	S - C - T
		— Sagittal	R >> L
Slice group 1	2	Coronal	A >> P
Slices	3	Transversal	F >> H
Dist. factor	1600 %	Coil Combine Mode	Adaptive Combine
Position	R0.8 P0.0 H21.4	AutoAlign	
Orientation	Transversal	Auto Coil Select	Default
Phase enc. dir.	A >> P	Auto Con Select	
Rotation	0.00 deg	Shim mode	Tune up
Phase oversampling	0 %	Adjust with body coil	Off
FoV read	320 mm	Confirm freq. adjustment	Off
FoV phase	100.0 %	Assume Silicone	Off
•			
Slice thickness	5.0 mm	? Ref. amplitude 1H	0.000 V
TR	19.10 ms	Adjustment Tolerance	Auto
TE	5.77 ms	Adjust volume	
Averages	1	Position	Isocenter
Concatenations	3	Orientation	Transversal
Filter	None	Rotation	0.00 deg
Coil elements	HEA;HEP;NE1,2;SP1-4	R >> L	350 mm
	, ,	A >> P	263 mm
ontrast		F>> H	350 mm
Flip angle	15 deg	ı	330 11111
Averaging mode	Short term	Physio	
Reconstruction	Magnitude	1st Signal/Mode	None
Measurements	1	Segments	1
	I Fach magairement	Angio	
Multiple series	Each measurement	Angio	Circula dia
esolution		Flow mode	Single dir.
Base resolution	256	— Encodings	1
Phase resolution	100 %	Velocity enc.	90 cm/s
	Off	Direction	Through plane
Phase partial Fourier	_	Rephased images	On
Interpolation	Off	Magnitude images	On
PAT mode	None	Phase images	On
Matrix Coil Mode	Triple		
······	· ······	Subtract	Off
Image Filter	Off	Std-Dev-Sag	Off
Distortion Corr.	Off	Std-Dev-Cor	Off
Prescan Normalize	Off	Std-Dev-Tra	Off
Normalize	Off	Std-Dev-Time	Off
	_	MIP-Sag	Off
B1 filter	Off		
Raw filter	Off	MIP-Cor	Off
Elliptical filter	Off	MIP-Tra	Off
		MIP-Time	Off
eometry		Save original images	On
Multi-slice mode	Sequential		
Series	Interleaved	Sequence	
Special sat.	None	Introduction	On O"
Opoolai dat.	140110	Asymmetric echo	Off
ystem		Contrasts	1
	Off	Bandwidth	260 Hz/Px

Flow comp.	No
RF pulse type Gradient mode RF spoiling	Normal Fast On
MB Number FOV Shift	1 1
Distance22	20

TA: 3:02 PAT:	Off Voxel size: 1.3x1.3x5.0	mm Rel. SNR: 1.00 US	ER: fl_fq_mb_greX
Properties		NE2	On
Prio Recon	Off	_ NE1	On
	Oli	HEP	On
Before measurement		HEA	On
After measurement	•	SP4	On
Load to viewer	On	SP2	On
Inline movie	Off	SP8	Off
Auto store images	On	SP6	Off
Load to stamp segments	Off	SP3	On
Load images to graphic	Off	SP1	On
segments		SP7	Off
Auto open inline display	Off		
Start measurement without	On	SP5	Off
further preparation		Positioning mode	REF
Wait for user to start	Off	Table position	H
Start measurements	single	Table position	0 mm
ļ	onigio	MSMA	S - C - T
Routine		Sagittal	R >> L
Slice group 1		Coronal	A >> P
Slices	3	Transversal	F >> H
Dist. factor	1600 %		
Position	R0.8 P0.0 H21.4	Coil Combine Mode	Adaptive Combine
Orientation	Transversal	AutoAlign	 D ()
Phase enc. dir.	A >> P	Auto Coil Select	Default
Rotation	0.00 deg	Shim mode	Tune up
Phase oversampling	0 %	Adjust with body coil	Off
FoV read	320 mm	Confirm freq. adjustment	Off
	100.0 %	Assume Silicone	Off
FoV phase			
Slice thickness	5.0 mm	? Ref. amplitude 1H	0.000 V
TR	19.10 ms	Adjustment Tolerance	Auto
TE	5.77 ms	Adjust volume	
Averages	1	Position	Isocenter
Concatenations	3	Orientation	Transversal
Filter	None	Rotation	0.00 deg
Coil elements	HEA;HEP;NE1,2;SP1-4	R >> L	350 mm
Contrast		A >> P	263 mm
	4.5 do a	_ F >> H	350 mm
Flip angle	15 deg	Dhusia	
Averaging mode	Short term	Physio	
Reconstruction	Magnitude	1st Signal/Mode	Pulse/Trigger
Measurements	1	Average cycle	No Signal ms
Multiple series	Each measurement	Captured cycle	-not set-
Walipio conco	Edon moded of for	Acquisition window	708 ms
Resolution		Trigger pulse	1
Base resolution	256	Trigger delay	0 ms
Phase resolution	100 %	Segments	1
Phase partial Fourier	Off	Phases	37
Interpolation	Off	Λ: -	
		Angio	Oin also dia
PAT mode	None	Flow mode	Single dir.
Matrix Coil Mode	Triple	Encodings	1
Imaga Filter	Off	Velocity enc.	100 cm/s
Image Filter	Off Off	Direction	Through plane
Distortion Corr.	Off	Rephased images	On
Prescan Normalize	Off	Magnitude images	On
Normalize	Off	Phase images	On
B1 filter	Off		04
Raw filter	Off	Subtract	Off
Elliptical filter	Off	Std-Dev-Sag	Off
Geometry		Std-Dev-Cor	Off
	Cognoptic	_ Std-Dev-Tra	Off
Multi-slice mode	Sequential	Std-Dev-Time	Off
Series	Interleaved	MIP-Sag	Off
Special sat.	None	MIP-Cor	Off
		MIP-Tra	Off
System		MIP-Time	Off
Body	Off	- 1	
· ·		107/+	

Save original images	On
Sequence	
Introduction	On
Asymmetric echo	Off
Contrasts	1
Bandwidth	260 Hz/Px
Flow comp.	No
RF pulse type	Normal
Gradient mode	Fast
RF spoiling	On
MB Number	3
FOV Shift	3
Distance22	20
DiolariooLL	20

 $\verb|\USER\AMRIT\Liyong\20150821\ep_seg_fid33_venc20_ipat3| \\$

TA: 2:43	Voxel size: 1.4×1.4×4.0 mm	Rel. SNR: 1.00 USER: ep	o_seg_fid_venc
Properties		Body	Off
Prio Recon	Off	HEP	On
Before measurement	OII	HEA	On
After measurement		Positioning mode	FIX
Load to viewer	On	Table position	Н
Inline movie	Off	Table position	0 mm
Auto store images	On	MSMA	S - C - T
Load to stamp segments	Off	Sagittal	R >> L
Load images to graphic	Off	Coronal	A >> P
segments		Transversal	F >> H
Auto open inline display	Off	Save uncombined	Off
Start measurement without	On	Coil Combine Mode	Sum of Squares
further preparation		AutoAlign	
Wait for user to start	Off	Auto Coil Select	Default
Start measurements	single	China manda	Ctandard
Poutino		Shim mode	Standard
Routine		Adjust with body coil	Off Off
Slice group 1	1	Confirm freq. adjustment	Off
Slices	1	Assume Silicone	Off
Dist. factor	50 %	? Ref. amplitude 1H	0.000 V
Position	L5.4 A15.4 H30.0	Adjustment Tolerance	Auto
Orientation	Transversal	Adjust volume	15 4 445 4 1100 0
Phase enc. dir.	A >> P	Position	L5.4 A15.4 H30.0
Rotation	0.00 deg	Orientation	Transversal
Phase oversampling	0 %	Rotation	0.00 deg
FoV read	180 mm	R >> L	180 mm
FoV phase	100.0 %	A >> P	180 mm
Slice thickness	4.0 mm	F >> H	4 mm
TR	29 ms	Physio	
TE	14 ms	1st Signal/Mode	None
Averages	1	Segments	6
Concatenations Filter	1 Name		
	None	Resp. control	Off
Coil elements	HEA;HEP	Sequence	
Contrast		Introduction	Off
MTC	Off	Dimension	2D
Flip angle	15 deg	Bandwidth	1502 Hz/Px
Fat suppr.	None	Free echo spacing	Off
Averaging mode	Long torm	Echo spacing	0.87 ms
Averaging mode Reconstruction	Long term Magnitude		OF
Measurements	800	EPI factor	25 Normal
Pause after meas.	0.0 s	RF pulse type	Normal
Multiple series	Off	Gradient mode	Fast
·	OII	RF spoiling	On
Resolution		Flow Compensation	Off
Base resolution	128	Centric Reorder	On
Phase resolution	100 %	Pat Ref Scan	On
Phase partial Fourier	Off	VENC value	400
Interpolation	Off	Undersampled	On
Matrix Coil Mode	Auto (CP)	•	
Distortion Corr.	Off		
Prescan Normalize	Off		
Raw filter			
	Off Off		
Elliptical filter			
Hamming	Off		
Geometry			
Multi-slice mode	Sequential		
Cariaa	Ascending		
Series	Ascending		

\\USER\AMRIT\Liyong\20150821\ep_seg_fid33_venc20_ipat2

Properties		Body	Off
Prio Recon	Off	HEP	On
Before measurement		HEA	On
After measurement		Positioning mode	FIX
Load to viewer	On	Table position	Н
Inline movie	Off	Table position	0 mm
Auto store images	On	MSMA	S - C - T
Load to stamp segments	Off	Sagittal	R >> L
Load images to graphic	Off	Coronal	A >> P
segments		Transversal	F >> H
Auto open inline display	Off	Save uncombined	Off
Start measurement without	On	Coil Combine Mode	Sum of Squares
further preparation		AutoAlign	
Wait for user to start	Off	Auto Coil Select	Default
Start measurements	single	Shim mode	Standard
Routine		Adjust with body coil	Off
Slice group 1		Confirm freq. adjustment	Off
Slices	1	Assume Silicone	Off
Dist. factor	50 %	? Ref. amplitude 1H	0.000 V
Position	L5.4 A15.4 H30.0	Adjustment Tolerance	Auto
Orientation	Transversal	Adjust volume	Auto
Phase enc. dir.	A >> P	Position	L5.4 A15.4 H30.0
Rotation	0.00 deg	Orientation	Transversal
Phase oversampling	0.00 deg 0 %	Rotation	0.00 deg
FoV read	180 mm	R >> L	180 mm
FoV phase	100.0 %	A >> P	180 mm
Slice thickness	4.0 mm	F>> H	4 mm
TR	36 ms	1 >>11	7 111111
TE	18 ms	Physio	
Averages	1	1st Signal/Mode	None
Concatenations	1	Segments	4
Filter	None	Resp. control	Off
Coil elements	HEA;HEP	•	Oll
	,	Sequence	
Contrast		Introduction	Off
MTC	Off	Dimension	2D
Flip angle	15 deg	Bandwidth	1502 Hz/Px
Fat suppr.	None	Free echo spacing	Off
Averaging mode	Long term	Echo spacing	0.87 ms
Reconstruction	Magnitude	EPI factor	33
Measurements	800	RF pulse type	Normal
Pause after meas.	0.0 s	Gradient mode	Fast
Multiple series	Off	RF spoiling	On
•	-		
Resolution		Flow Compensation	Off
Base resolution	128	Centric Reorder	On
Phase resolution	100 %	Pat Ref Scan	On
Phase partial Fourier	Off	VENC value	400
Interpolation	Off	Undersampled	On
Matrix Coil Mode	Auto (CP)		
Distortion Corr.	Off		
Prescan Normalize	Off		
Raw filter	Off		
Elliptical filter	Off		
Hamming	Off		
Geometry			
Multi-slice mode	Sequential		
Series	Ascending		
Special sat.	None		

\\USER\AMRIT\Liyong\20150821\ep_seg_fid33_venc2_ipat4_brain

TA: 2:39	Voxel size: 1.4×1.4×4.0 mm	Rel. SNR: 1.00 USER: e _l	p_seg_fid_venc
		Body	Off
roperties		HEP	On
Prio Recon	Off	HEA	On
Before measurement			
After measurement		Positioning mode	FIX
Load to viewer	On	Table position	Н
Inline movie	Off	Table position	0 mm
Auto store images	On	MSMA	S - C - T
Load to stamp segments	Off	Sagittal	R >> L
Load images to graphic	Off	Coronal	A >> P
segments		Transversal	F >> H
Auto open inline display	Off	Save uncombined	Off
Start measurement without	On	Coil Combine Mode	Sum of Squares
further preparation		AutoAlign	·
Wait for user to start	Off	Auto Coil Select	Default
Start measurements	single		
	5g.c	Shim mode	Standard
loutine		Adjust with body coil	Off
Slice group 1		Confirm freq. adjustment	Off
Slices	1	Assume Silicone	Off
Dist. factor	50 %	? Ref. amplitude 1H	0.000 V
Position	R1.6 A13.4 H148.5	Adjustment Tolerance	Auto
Orientation	Transversal	Adjust volume	
Phase enc. dir.	A >> P	Position	R1.6 A13.4 H148.5
Rotation	0.00 deg	Orientation	Transversal
Phase oversampling	0.00 deg 0 %	Rotation	0.00 deg
FoV read	180 mm	R >> L	180 mm
		A >> P	
FoV phase	100.0 %		180 mm
Slice thickness	4.0 mm	F >> H	4 mm
TR	22 ms	Physio	
TE	11 ms	1st Signal/Mode	None
Averages	1	Segments	8
Concatenations	1		
Filter	None	Resp. control	Off
Coil elements	HEA;HEP	Carmana	
Contrast		Sequence	
MTC	0"	Introduction	Off
	Off	Dimension	2D
Flip angle	15 deg	Bandwidth	1502 Hz/Px
Fat suppr.	None	Free echo spacing	Off
Averaging mode	Long term	Echo spacing	0.87 ms
Reconstruction	Magnitude	EDI factor	17
Measurements	800	EPI factor	17
Pause after meas.		RF pulse type	Normal
	0.0 s	Gradient mode	Fast
Multiple series	Off	RF spoiling	On
Resolution		Flow Compensation	Off
Base resolution	128	Centric Reorder	On
Phase resolution	100 %	Pat Ref Scan	On
Phase partial Fourier	Off	VENC value	40
Interpolation	Off		
		Undersampled	On
Matrix Coil Mode	Auto (CP)		
Distortion Corr.	Off		
Prescan Normalize	Off		
Raw filter	Off		
Elliptical filter	Off		
	Off		
Hamming			
Geometry			
•	Sequential		
Geometry	Sequential Ascending		

\\USER\AMRIT\Liyong\20150821\ep_seg_fid33_venc40_ipat4

TA: 2:39	Voxel size: 1.4×1.4×4.0 mm	Rel. SNR: 1.00 USER: e	p_seg_fid_venc
		Body	Off
roperties		HEP	On
Prio Recon	Off	HEA	On
Before measurement			
After measurement		Positioning mode	FIX
Load to viewer	On	Table position	Н
Inline movie	Off	Table position	0 mm
Auto store images	On	MSMA	S - C - T
Load to stamp segments	Off	Sagittal	R >> L
Load images to graphic	Off	Coronal	A >> P
segments		Transversal	F >> H
Auto open inline display	Off	Save uncombined	Off
Start measurement without	On	Coil Combine Mode	Sum of Squares
further preparation		AutoAlign	
Wait for user to start	Off	Auto Coil Select	Default
Start measurements	single		
	5g.c	Shim mode	Standard
Routine		Adjust with body coil	Off
Slice group 1		Confirm freq. adjustment	Off
Slices	1	Assume Silicone	Off
Dist. factor	50 %	? Ref. amplitude 1H	0.000 V
Position	L5.4 A15.4 H30.0	Adjustment Tolerance	Auto
Orientation	Transversal	Adjust volume	
Phase enc. dir.	A >> P	Position	L5.4 A15.4 H30.0
Rotation	0.00 deg	Orientation	Transversal
	0.00 deg 0 %	Rotation	0.00 deg
Phase oversampling			•
FoV read	180 mm	R >> L	180 mm
FoV phase	100.0 %	A >> P	180 mm
Slice thickness	4.0 mm	F >> H	4 mm
TR	22 ms	Physio	
TE	11 ms	1st Signal/Mode	None
Averages	1	Segments	8
Concatenations	1	Segments	
Filter	None	Resp. control	Off
Coil elements	HEA;HEP	1	
Santuant		Sequence	
Contrast	0"	Introduction	Off
MTC	Off	Dimension	2D
Flip angle	15 deg	Bandwidth	1502 Hz/Px
Fat suppr.	None	Free echo spacing	Off
Averaging mode	Long term	Echo spacing	0.87 ms
Reconstruction	Magnitude	EDI footor	47
Measurements	800	EPI factor	17
		RF pulse type	Normal
Pause after meas.	0.0 s	Gradient mode	Fast
Multiple series	Off	RF spoiling	On
Resolution		Flow Compensation	Off
Base resolution	128	Centric Reorder	On
Phase resolution	100 %		
	Off	Pat Ref Scan	On
Phase partial Fourier	_	VENC value	800
Interpolation	Off	Undersampled	On
Matrix Coil Mode	Auto (CP)		
Distortion Corr.	Off		
Prescan Normalize	Off		
Raw filter	Off		
Elliptical filter	Off		
	Off		
•			
Hamming			
Hamming Geometry			
Hamming Geometry Multi-slice mode	Sequential		
Hamming Geometry			

 $\label{local_loc$

Voxel size: 1.2x1.2x5.0 mm Rel. SNR: 1.00

USER: fl_fq_mb_gre

TA: 0:17

PAT: Off

Pio Recon Dif	Properties		HEP	Off
Before measurement After measurement Load to viewer On Table position On On On On On On On		Off	HEA	Off
After measurement Load to viewer On Inline movie Off MSMA S - C - T			Positioning mode	REF
Load to viewer On Inline movie Off Auto store images On Control MSMA S - C - T Auto store images On Control MSMA S - C - T Auto store images On Control MSMA S - C - T Auto store images On Control MSMA S - C - T Auto some summer without and part in the part of start of the part of the pa				
Inline movie		On		
Auto store images				
Load to stamp segments Off Coronal A >> P Load images to graphic Off Coll Combine Mode Adaptive Combine Auto open inline display Start measurement without but by start measurements On Auto Aduloing ————————————————————————————————————			_	
Load images to graphic segments Auto open inline display of the segments Auto Coll Select Default Untriher preparation Wait for user to start of the segment of the segme				
segments Auto open inline display Off Auto open inline display Off Auto open inline display Start measurement without further preparation Off Auto Coll Select Default Walt for user to start Off Shim mode Tune up Southe Adjust with body coil Off Slices group 1 Slices 3 Slices poup 1 Assume Silicone Off Slices on 2 3 Auto Coll Select Off Assume Silicone Off Adjust with body coil Off Slices solition Isocenter Off P. Ref. amplitude 1H 0.000 V Adjust wolume Auto Adjust wolume Auto Adjustment Tolerance Auto Adjust wolume Auto Adjust wolume Phase ocressmpling 0.00 deg R. S. L. 350 mm Fostition Increased D.00 deg R. S. L. 350 mm Fostition Transversal None Transversal None Transversal None Fostitation 0.00 deg R. S. L. 350 mm Fostition Transversal None Transv		_		
Auto Open inline display		Off		
Start measurement without further preparation Wait for user to start Off Start measurements Single Shim mode Tune up Off Adjust with body coil Off Adjust with body				•
Mustif or user to start Start measurements Single Shim mode Adjust with body coil Off Confirm freq, adjustment Off Assume Silicone Off			g .	
Wait for user to start Start measurements Off Start measurements Snim mode of Confirm freq, adjustment Off Confirm freq, adjustment Tolerance Routine Assume Silicon Off P. Ref, amplitude 11H 0,000 V Silices 3 3 Dist, factor 700 % Position Isocenter Position Isocenter Position Orientation Transversal Phase enc. dir. A >> P Rotation 0,000 deg R> Confirm freq Position Isocenter No digust volume Adjust volume Application D.00 deg R >> P Position D.00 deg R >> P Physio D.00 deg R >> D D.00 deg R >>	Start measurement without	On	Auto Coil Select	Default
Valid to disert Start measurements Single Start measurements Single Confirm freq. adjustment Off	further preparation		Obies es als	T
Start measurements	Wait for user to start	Off		
Routine	Start measurements	sinale		
Slice group 1 Slice group 1 Slices Slice		3 -		
Silces				Off
Dist. factor 700 % Position Isocenter I	Slice group 1		? Ref. amplitude 1H	0.000 V
Position	Slices	3	Adjustment Tolerance	Auto
Position	Dist. factor	700 %		
Orientation Transversal Orientation Transversal Phase enc. dir. A >> P Rotation 0.00 deg Rotation 0.00 deg R >> L 350 mm Phase oversampling 0 % A >> P 263 mm FoV pase 100.0 % F >> H 350 mm Floy phase 100.0 % F >> H 350 mm Flict richickness 5.0 mm T S Signal/Mode None TE 5.00 ms A Richickness None Coll elements BC Segments 1 Coll elements BC Yelocity enc. 90 cm/s Coll elements BC Yelocity enc. 90 cm/s Contrast BC Yelocity enc. 90 cm/s Contrast BC Yelocity enc. 90 cm/s Contrast BE Contrast Through plane Reconstruction Magnitude Rephased images On Averaging mode Short term Reconstruction Magnitude images On M		Isocenter	•	Isocenter
Phase enc. dir. A >> P Rotation 0.00 deg R >> L 350 mm Phase oversampling 0 % A >> P 263 mm FoV read 300 mm F >> H 350 mm FoV phase 100.0 % Physio Slice thickness 5.0 mm Physio TR 17.55 ms Physio TE 5.00 ms Angio Averages 1 Angio Concatenations 3 Flow mode Single dir. Filler None Segments 1 Coll elements BC Velocity enc. 90 cm/s Contrast Direction Through plane Flip angle 15 deg Magnitude images On Averaging mode Short term Rephased images On Reconstruction Magnitude Subtract Off Measurements 1 Subtract Off Multiple series Each measurement Subtract Off Resolution 256 Sub				
Rotation				
Phase oversampling 0 % A >> P 263 mm FoV read 300 mm F >> H 350 mm FoV phase 100.0 % Physio Slice thickness 5.0 mm TS TS 1st Signal/Mode None TE 5.00 ms Angio Angio Concatenations 1 Angio Concatenations 3 Filter None Encodings 1 1 Coil elements BC Velocity enc. 90 cm/s 90 cm/s 1 Contrast BC Velocity enc. 90 cm/s 90 cm/s 1 Flip angle 15 deg Flow mode Single dir. Encodings 1 1 4 1 4 1 4 1 4 1 4 1 4 1 4 4 1 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4				•
FoV read				
FoV phase 100.0 % Slice thickness 5.0 mm TR 17.55 ms TE 5.00 ms Averages 1 Concatenations 3 Filter None Coil elements BC Coil elements BC Contrast Flip angle Flip angle 15 deg Averaging mode Short term Reconstruction Magnitude Measurements 1 Multiple series Each measurement Resolution 256 Phase resolution 256 Phase partial Fourier Off Interpolation Off MIP-Tra Off MIP-Tra Off Matrix Coil Mode Auto (CP) Image Filter Off Distortion Corr. Off Prescan Normalize Off Normalize Off Normalize Off Poff Bandwidth 260 Hz/Px Fli				
Slice thickness 17.55 ms 1st Signal/Mode None TR 17.55 ms 1st Signal/Mode Segments 1			F >> H	350 mm
TR	•	100.0 %	Physio	
TE	Slice thickness	5.0 mm		None
Averages	TR	17.55 ms		
Concatenations Filter None Coil elements BC Contrast Flip angle 15 deg Averaging mode Reconstruction Magnitude Measurements 1 Multiple series Base resolution Phase resolution Phase partial Fourier Off Interpolation Off Matrix Coil Mode Matrix Coiff Side Magnitude Miler Mi	TE	5.00 ms	Segments	1
Concatenations Filter None Coil elements BC Contrast Flip angle 15 deg Averaging mode Reconstruction Magnitude Measurements 1 Multiple series Base resolution Phase resolution Phase partial Fourier Off Interpolation Off Matrix Coil Mode Matrix Coiff Side Magnitude Miler Mi	Averages	1	Angio	
Filter Coil elements BC Contrast Flip angle 15 deg Direction Through plane Rephased images On Magnitude images On Phase images On Phase images On Magnitude images On Magnitude images On Magnitude images On Phase images On Phase images On Magnitude images On Magnitude images On Phase images On Off Std-Dev-Cor Off Std-Dev-Cor Off Std-Dev-Tra Off Std-Dev-Tra Off Interpolation Off Off MIP-Sag Off MIP-Sag Off MIP-Sag Off MIP-Sag Off MIP-Sag Off MIP-Tra Off	-	3		Single dir
Contrast Contrast Flip angle Averaging mode Reconstruction Reconstruction Measurements Multiple series Base resolution Phase partial Fourier Interpolation Mode Matrix Coil Mode Matrix Coil Mode Matrix Coil Mode Mode Matrix Coil Mode Mode Mode Mode Mode Mode Mode Mode				_
Contrast Flip angle Averaging mode Averaging mode Reconstruction Magnitude Measurements Multiple series Base resolution Phase resolution Phase resolution Phase partial Fourier Interpolation Off Matrix Coil Mode Matrix Coil Mode Matrix Coil Mode Modes iller Mormalize Off Prescan Normalize B1 filter Off Remode Matrix Coil Mode Modes Modes Auto (CP) Direction Rephased images On Magnitude images Off Std-Dev-Sag Off Std-Dev-Cor Off Std-Dev-Tra Off MIP-Sag Off MIP-Sag Off MIP-Sag Off MIP-Tra Off MIP-Tra Off MIP-Tra Off Save original images On Sequence Introduction On Asymmetric echo Off Contrasts 1 Bandwidth 260 Hz/Px Flow comp. No Rephased images On Magnitude images On Magnitude images Off Std-Dev-Cor Off Std-Dev-Tra Off MIP-Tra Off MIP-Tra Off MIP-Tra Off Save original images On Asymmetric echo Off Contrasts 1 Bandwidth 260 Hz/Px Flow comp. No Rephased images On Magnitude Interleaved MIP-Gor Off Std-Dev-Cor Off MIP-Sag Off MIP-Tra Off MIP-Tra Off Save original images On Rephased images On Magnitude Interleaved Off Std-Dev-Sag Off MIP-Sag Off MIP-Sag Off MIP-Tra Off MIP-Tra Off Save original images On Rephased images On Magnitude Interleaved Off Std-Dev-Cor Off Std-Dev-Time Off MIP-Tra Off MIP-Tra Off MIP-Tra Off MIP-Tra Off Save original images On Rephased images On Magnitude Interleave Off MIP-Sag Off MIP-Sag Off MIP-Cor Off MIP-Tra O				•
Flip angle 15 deg Magnitude images On Averaging mode Short term Reconstruction Magnitude Measurements 1 Multiple series Each measurement Std-Dev-Cor Off Std-Dev-Cor Off Std-Dev-Tra Off Std-Dev-Tra Off MIP-Sag Off MIP-Sag Off MIP-Sag Off MIP-Sag Off MIP-Sag Off MIP-Tra O	Con elements	ВС		
Averaging mode Reconstruction Magnitude Measurements 1 Substract Off Std-Dev-Sag Off Std-Dev-Cor Off Std-Dev-Tra Off Std-Dev-Tra Off MIP-Sag Off MIP-Sag Off MIP-Sag Off MIP-Tra Off MIP-T	Contrast			
Averaging mode Short term Reconstruction Magnitude Measurements 1 Multiple series Each measurement Resolution 256 Phase resolution 256 Phase partial Fourier Off Interpolation Off Matrix Coil Mode Auto (CP) Image Filter Off Distortion Corr. Off Prescan Normalize Off Raw filter Off Sequential Secuential	Flip angle	15 dea		
Reconstruction Magnitude Measurements 1 Subtract Off Std-Dev-Sag Off Std-Dev-Cor Off Std-Dev-Tra Off Std-Dev-Tra Off Std-Dev-Tra Off Std-Dev-Tra Off MIP-Sag Off MIP-Tra Off M				On
Measurements Multiple series Each measurement Multiple series Each measurement Std-Dev-Sag Std-Dev-Cor Off Std-Dev-Tra Off Std-Dev-Tra Off Std-Dev-Time Off Std-Dev-Time Off Std-Dev-Time Off Std-Dev-Time Off MIP-Sag Off MIP-Sag Off MIP-Tra Off MIP-Tra Off MIP-Tra Off MIP-Time Off Save original images On Matrix Coil Mode Matrix	Averaging mode	Short term	Phase images	On
Measurements Multiple series1 Each measurementStd-Dev-Sag Std-Dev-Cor Std-Dev-Tra OffOffBase resolution Phase resolution Phase partial Fourier Interpolation256 Off<	Reconstruction	Magnitude	Outstan at	O#
Resolution 256 Base resolution 100 % Std-Dev-Tra Off Phase resolution 100 % MIP-Sag Off Interpolation Off MIP-Tra Off Interpolation Off MIP-Tra Off MIP-Time Off Save original images On Sequence Image Filter Off Distortion Corr. Off Prescan Normalize Off Normalize Off B1 filter Off Raw filter Off Raw filter Off Geometry Multi-slice mode Sequential Special sat. None Std-Dev-Cor Off Std-Dev-Tra Off MIP-Sag Off MIP-Tra Off MIP-Tra Off MIP-Tra Off MIP-Tra Off Save original images On MIP-Time Off Save original images On MIP-Time Off Save original images On MIP-Time Off MIP-Tra	Measurements	1		
Resolution Base resolution 256 Phase resolution 100 % Phase partial Fourier Off Interpolation Off PAT mode None Matrix Coil Mode Auto (CP) Image Filter Off Distortion Corr. Off Prescan Normalize Off B1 filter Off B2 filter Off B3 filter Off B4 filter Off B5 filter Off B6 filter Off B7 filter Off B8 filter Off B9 filter Off B1 filter Off B1 filter Off B2 filter Off B3 filter Off B4 filter Off B5 filter Off B6 filter Off B7 filter Off B8 filter Off B9 filte	Multiple series	Each measurement		
Base resolution 256 Phase resolution 100 % Phase partial Fourier Off Interpolation Off PAT mode None Matrix Coil Mode Auto (CP) Image Filter Off Distortion Corr. Off Normalize Off B1 filter Off Raw filter Off Elliptical filter Off Multi-slice mode Sequential Special sat. None Std-Dev-Time Off MIP-Cor Off MIP-Tra Off MIP-Tra Off MIP-Time Off Save original images On Sequence Introduction On Asymmetric echo Off Contrasts 1 Bandwidth 260 Hz/Px Flow comp. No RF pulse type Normal Gradient mode Fast RF spoiling On MB Number 1 FOV Shift 1	•			
Phase resolution 100 % Phase partial Fourier Off Interpolation Off PAT mode None Matrix Coil Mode Image Filter Off Distortion Corr. Off Normalize Off B1 filter Off B2 filter Off B3 sequence Introduction On Asymmetric echo Off Contrasts 1 Bandwidth 260 Hz/Px Flow comp. No Raw filter Off Elliptical filter Off Geometry Multi-slice mode Series Interleaved Special sat. None MIP-Sag Off MIP-Tra Off MIP-Time Off MIP-Ti	Resolution			
Phase partial Fourier Off Interpolation Off MIP-Cor Off MIP-Tra Off MIP-Tra Off MIP-Time Off Save original images On MIP-Time Sequence Image Filter Off Distortion Corr. Off Prescan Normalize Off Normalize Off Saymmetric echo Off Contrasts 1 Sandwidth 260 Hz/Px Flow comp. No Sequence Illiptical filter Off Saymmetric echo Off Sandwidth Sandwidth Sandwidth Sandwidth Sandwidth Saymmetric echo Off Sandwidth Sandwidth Saymmetric echo Off Sandwidth Sandwidth Sandwidth Saymmetric echo Off Sandwidth Sandwidth Sandwidth Sandwidth Sandwidth Saymmetric echo Off Sandwidth	Base resolution		Std-Dev-Time	
Interpolation Off MIP-Tra Off PAT mode None Matrix Coil Mode Auto (CP) Image Filter Off Distortion Corr. Off Prescan Normalize Off Save original images On Off Asymmetric echo Off Contrasts 1 Bandwidth 260 Hz/Px Flow comp. No Off Elliptical filter Off Raw filter Off Sequential Series Interleaved MB Number 1 FOV Shift 1 Special sat. None	Phase resolution	100 %	MIP-Sag	Off
Interpolation Off MIP-Tra Off PAT mode None Matrix Coil Mode Auto (CP) Image Filter Off Distortion Corr. Off Prescan Normalize Off Save original images On Off Asymmetric echo Off Contrasts 1 Bandwidth 260 Hz/Px Flow comp. No Off Elliptical filter Off Raw filter Off Sequential Series Interleaved MB Number 1 FOV Shift 1 Special sat. None	Phase partial Fourier	Off	MIP-Cor	Off
PAT mode Matrix Coil Mode Auto (CP) Image Filter Off Sequence Image Filter Off Off Distortion Corr. Off Prescan Normalize Off Sequence B1 filter Off Sequence Off Contrasts 1 Sequence Off Sequence O		_		
Matrix Coil Mode Matrix Coil Mode Auto (CP) Image Filter Distortion Corr. Prescan Normalize Normalize Off B1 filter Coff Raw filter Elliptical filter Off Multi-slice mode Sequential Series Interleaved Sequence Introduction Asymmetric echo Off Contrasts 1 Bandwidth 260 Hz/Px Flow comp. No RF pulse type Normal Gradient mode Fast RF spoiling On MB Number 1 FOV Shift 1				
Image Filter Off Distortion Corr. Off Prescan Normalize Off B1 filter Off Elliptical filter Off Multi-slice mode Series Interleaved Sequence Introduction On Asymmetric echo Off Contrasts 1 Bandwidth 260 Hz/Px Flow comp. No RF pulse type Normal Gradient mode Fast RF spoiling On MB Number 1 FOV Shift 1	PAT mode			
Image Filter Distortion Corr. Off Prescan Normalize Normalize Off B1 filter Raw filter Elliptical filter Off Multi-slice mode Series Introduction On Asymmetric echo Off Contrasts 1 Bandwidth 260 Hz/Px Flow comp. No RF pulse type Gradient mode Fast RF spoiling On MB Number 1 FOV Shift 1	Matrix Coil Mode	Auto (CP)	Save original irriages	5 11
Distortion Corr. Off Prescan Normalize Off Normalize Off B1 filter Off Raw filter Off Elliptical filter Off Multi-slice mode Series Interleaved Special sat. None Introduction Off Asymmetric echo Off Contrasts 1 Bandwidth 260 Hz/Px Flow comp. No RF pulse type Normal Gradient mode Fast RF spoiling On MB Number 1 FOV Shift 1	Land and Eth	O#	···· Sequence	
Distortion Corr. Prescan Normalize Normalize Off Normalize B1 filter B1 filter Raw filter Coff Elliptical filter Off Multi-slice mode Series Interleaved None Asymmetric echo Off Contrasts 1 Bandwidth 260 Hz/Px Flow comp. No RF pulse type Gradient mode Fast RF spoiling On MB Number 1 FOV Shift 1			Introduction	On
Prescan Normalize Normalize Normalize Off B1 filter Geometry Multi-slice mode Series Interleaved Off Normalize Off Bandwidth Bandwidth Bandwidth Flow comp. RF pulse type Gradient mode Fast RF spoiling On MB Number FOV Shift FOV Shift 1 Contrasts 1 Bandwidth 260 Hz/Px No				_
Normalize B1 filter Off Raw filter Off Elliptical filter Off Multi-slice mode Series Interleaved Off Special sat. Off Bandwidth 260 Hz/Px Flow comp. No RF pulse type Gradient mode Fast RF spoiling On MB Number 1 FOV Shift 1				
B1 filter Raw filter Off Elliptical filter Off Geometry Multi-slice mode Series Interleaved Special sat. Flow comp. RF pulse type Oradient mode Fast RF spoiling On MB Number 1 FOV Shift 1	Normalize	Off		
Raw filter Off Elliptical filter Off Geometry Multi-slice mode Series Interleaved Special sat. None Flow comp. RF pulse type Normal Gradient mode Fast RF spoiling On MB Number 1 FOV Shift 1	B1 filter	Off		
Elliptical filter Off RF pulse type Normal Gradient mode Fast RF spoiling On Multi-slice mode Sequential RF spoiling On Series Interleaved MB Number 1 Special sat. None			riow comp.	INU
Geometry Multi-slice mode Sequential Series Interleaved MB Number 1 Special sat. None Gradient mode RF sst RF spoiling On MB Number 1 FOV Shift 1			RF pulse type	Normal
RF spoiling On	•	~		
Series Interleaved MB Number 1 Special sat. None FOV Shift 1				
SeriesInterleavedMB Number1Special sat.NoneFOV Shift1	Multi-slice mode	Sequential	IN Spoiling	
Special sat. None FOV Shift 1			MB Number	1
Special sat. None				
System	Special sat.	None	1	-
. AV SIELLI	System			
Body On	System	0:-		