$\verb|\USER\AMRIT\Liyong2\CSF_mecha\localizer| \\$ Voxel size: 1.1×1.0×7.0 mm Rel. SNR: 1.00

TA: 0:13 PA	AT: Off Voxel size: 1.1×1.0×		SIEMENS: gre
Description		Phase resolution	90 %
Properties	0"	- Phase partial Fourier	Off
Prio Recon Before measurement	Off	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 Prescan Normalize	Off On
segments		Normalize	Off
Auto open inline display	Off	B1 filter	Off
Start measurement without	Off	Raw filter	Off
further preparation	Off	Elliptical filter	On
Wait for user to start Start measurements	single	Mode	Inplane
	Sirigle	Goometry	
Routine		Geometry - Multi-slice mode	Sequential
Slice group 1		Series	Interleaved
Slices	1		
Dist. factor	20 %	Saturation mode	Standard
Position Orientation	Isocenter	Special sat.	None
Phase enc. dir.	Sagittal A >> P	T: 0T	
Rotation	0.00 deg	Tim CT mode	Off
Slice group 2	0.00 deg	System	
Slices	1	Body	Off
Dist. factor	20 %	NE2	Off
Position	Isocenter	NE1	Off
Orientation	Transversal	HEP	Off
Phase enc. dir.	A >> P	HEA	Off
Rotation	0.00 deg	SP4	On
Slice group 3		SP2	On O#
Slices	1	SP8 SP6	Off Off
Dist. factor	20 %	SP3	On
Position	Isocenter	SP1	Off
Orientation	Coronal	SP7	Off
Phase enc. dir. Rotation	R >> L 0.00 deg	SP5	On
Phase oversampling	0.00 deg 0 %		
FoV read	250 mm	Positioning mode	REF
FoV phase	100.0 %	Table position  Table position	H 0 mm
Slice thickness	7.0 mm	MSMA	S - C - T
TR	8.6 ms	Sagittal	R >> L
TE	4.00 ms	Coronal	A >> P
Averages	2	Transversal	F >> H
Concatenations	3	Save uncombined	Off
Filter	Prescan Normalize, Elliptical	Coil Combine Mode	Adaptive Combine
Cail alors sets	filter	AutoAlign	
Coil elements	SP2-5	Auto Coil Select	Default
Contrast		Shim mode	Tune up
TD	0 ms	Adjust with body coil	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 350 mm
Multiple series	Each measurement	R >> L A >> P	350 mm 263 mm
Resolution		F >> H	350 mm
Base resolution	256	<del>-</del>	330 111111
1		Physio 1/+	

1st Signal/Mode Segments	None 1
Dark blood	Off
Resp. control	Off
Inline	
Subtract	Off
Liver registration	Off
Std-Dev-Sag Std-Dev-Cor	Off Off
Std-Dev-Cor 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 Off
PEI MIP - time	Off
Sequence	Oli
Introduction	On
Dimension	2D
Phase stabilisation	Off
Asymmetric echo	Allowed
Contrasts	1
Bandwidth	320 Hz/Px
Flow comp. Allowed delay	No 0 s
RF pulse type	Normal
Gradient mode Excitation	Normal Slice-sel.
RF spoiling	On
Tit Spoining	011

\\USER\AMRIT\Liyong2\CSF\_mecha\t2\_haste\_sag\_p2

TA: 0:21 PAT: 2 Voxel size: 1.0×1.0×2.5 mm Rel. SNR: 1.00 SIEMENS: haste			
Proportion		Width	4
Properties	0"	Unfiltered images	Off
Prio Recon	Off	B1 filter	Off
Before measurement		Raw filter	Off
After measurement	02	Elliptical filter	On
Load to viewer	On Off	Mode	Inplane
Inline movie	Off	ı	•
Auto store images	On Off	Geometry	Oin all all at
Load to stamp segments	Off	Multi-slice mode	Single shot
Load images to graphic	Off	Series	Interleaved
segments	0#	Special sat.	None
Auto open inline display	Off		
Start measurement without	On	Tim CT mode	Off
further preparation	0#	l	<b></b>
Wait for user to start	Off	System	
Start measurements	single	Body	Off
Coutine		NE2	Off
Slice group 1		─ NE1	Off
Slices	25	HEP	Off
Dist. factor	0 %	HEA	Off
Position	R11.4 P13.6 H30.6	SP4	On
Orientation		SP2	On
	Sagittal A >> P	SP8	Off
Phase enc. dir.		SP6	Off
Rotation	0.00 deg	SP3	On
Phase oversampling	0 %	SP1	Off
FoV read	192 mm	SP7	Off
FoV phase	100.0 %	SP5	Off
Slice thickness	2.5 mm	5F0	OII
TR	395 ms	Positioning mode	FIX
TE	76 ms	Table position	H
Averages	2	Table position	0 mm
Concatenations	1	MSMA	S - C - T
Filter	Normalize, Elliptical filter	Sagittal	R >> L
Coil elements	SP2-4	Coronal	A >> P
	<del>-</del>	Transversal	A >> P F >> H
Contrast			
MTC	Off	Save uncombined	Off
Magn. preparation	None	Coil Combine Mode	Adaptive Combine
Flip angle	110 deg	AutoAlign	
Fat suppr.	None	Auto Coil Select	Default
Water suppr.	None	Shim mode	Tune up
Restore magn.	Off	Adjust with body coil	Off
	· · · · · · · · · · · · · · · · · · ·	Confirm freq. adjustment	Off
Averaging mode	Long term	Assume Silicone	Off
Reconstruction	Magnitude		
Measurements	1	? Ref. amplitude 1H	0.000 V
Multiple series	Each measurement	Adjustment Tolerance	Auto
•		Adjust volume	
Resolution	100	Position	Isocenter
Base resolution	192	Orientation	Transversal
Phase resolution	100 %	Rotation	0.00 deg
Phase partial Fourier	5/8	R >> L	350 mm
Interpolation	Off	A >> P	263 mm
PAT mode	CPADDA	F >> H	350 mm
	GRAPPA	Dhusia	
Accel. factor PE	2	Physio	
Ref. lines PE	24	1st Signal/Mode	None
Matrix Coil Mode	Auto (Triple)	Dark blood	Off
Reference scan mode	Integrated	Daik blood	
Image Filter	Off	Resp. control	Off
Image Filter	Off		
Distortion Corr.		Inline	
Prescan Normalize	Off	Subtract	Off
Normalize	On	Std-Dev-Sag	Off
Intensity	Medium	Otal Day Oan	Off
Cut off	20	Std-Dev-Cor	Oli

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

#### Sequence

Introduction	On
Dimension	2D
Contrasts	1
Bandwidth	592 Hz/Px
Flow comp.	No
Allowed delay	30 s
Echo spacing	5.4 ms
Turbo factor	192
RF pulse type	Fast
Gradient mode	Fast

\\USER\AMRIT\Liyong2\CSF\_mecha\ep2d\_venc4\_axial\_L1\_FH\_shallow

Rel. SNR: 1.00

USER: ep2d\_venc\_ms\_sbmb\_SAT

Voxel size: 1.5×1.5×4.0 mm

PAT: 2

TA: 1:19:55

Dramartia			
Properties	0"	Sat. region 1	50
Prio Recon	Off	Thickness	50 mm
Before measurement		Position	L0.0 A97.8 H45.6
After measurement		Orientation	C > T-13.5
Load to viewer	On	Sat. region 2	
Inline movie	Off	Thickness	50 mm
Auto store images	On	Position	L0.0 P53.6 H81.9
Load to stamp segments	Off	Orientation	C > T-13.5
Load images to graphic	Off	Special sat.	None
segments		System	
Auto open inline display	Off	Body	Off
Start measurement without	On		
further preparation		NE2	Off
Wait for user to start	Off	NE1	Off
Start measurements	single	HEP	Off
- I	3	HEA	Off
Routine		SP4	Off
Slice group 1		SP2	On
Slices	1	SP8	Off
Dist. factor	700 %	SP6	Off
Position	R0.5 P15.6 H103.5	SP3	On
Orientation	T > C-8.1	SP1	Off
Phase enc. dir.	A >> P	SP7	Off
Rotation	0.00 deg	SP5	Off
Phase oversampling	0 %		<b>—</b>
FoV read	192 mm	Positioning mode	FIX
FoV phase	100.0 %	Table position	Н
Slice thickness	4.0 mm	Table position	0 mm
TR	5920 ms	MSMA	S - C - T
TE TE	34.0 ms	Sagittal	R >> L
Averages	1	Coronal	A >> P
Concatenations	1	Transversal	F >> H
Filter	None	Coil Combine Mode	Sum of Squares
		AutoAlign	
Coil elements	SP2,3	Auto Coil Select	Default
Contrast		China mada	Ctandand
MTC	Off	Shim mode	Standard
Flip angle	25 deg	Adjust with body coil	Off
Fat suppr.	Fat sat.	Confirm freq. adjustment	Off
		Assume Silicone	Off
Averaging mode	Long term	? Ref. amplitude 1H	0.000 V
Reconstruction	Magnitude	Adjustment Tolerance	Auto
Measurements	820	Adjust volume	
Delay in TR	0 ms	Position	R0.5 P15.6 H103.5
Multiple series	Off	Orientation	T > C-8.1
Resolution		Rotation	0.00 deg
Base resolution	128	R >> L	192 mm
Phase resolution	100 %	A >> P	192 mm
		F >> H	4 mm
Phase partial Fourier	6/8	Physic	
Interpolation	Off	Physio 1/Marks	Mana
PAT mode	GRAPPA	1st Signal/Mode	None
Accel, factor PE	2	Angio	
Ref. lines PE	24	Flow mode	Single dir.
Matrix Coil Mode	Auto (Triple)	Encodings	1
Reference scan mode	Separate	Velocity enc.	8 cm/s
		Direction	Through plane
Distortion Corr.	Off	Magnitude sum	Off
Prescan Normalize	Off	wayiiiuue suffi	OII
Raw filter	Off	Sequence	
Elliptical filter	Off	Introduction	Off
Hamming	Off	Bandwidth	1776 Hz/Px
	-	Free echo spacing	Off
Geometry		Echo spacing	0.94 ms
Multi-slice mode	Interleaved		
Series	Ascending	EPI factor	128

RF pulse type	Normal
Gradient mode	Fast
RF spoiling	On
RF90 duration MB Number DummyScan Number FOV Shift Number Shift K0 Center Every Other Slice SER Number Venc Repetition Spoil factor Skew Direction DualBand Sat FOV Dir Venc Type(0off,1+-,20+,3on,400++)	5120 1 5 1 1 1 1 1 800 5 1 0

\\USER\AMRIT\Liyong2\CSF\_mecha\ep2d\_venc4\_axial\_L1\_FH\_deep

Rel. SNR: 1.00

USER: ep2d\_venc\_ms\_sbmb\_SAT

Voxel size: 1.5×1.5×4.0 mm

PAT: 2

TA: 1:19:55

Properties		Sat. region 1	
Prio Recon	Off	Thickness	50 mm
Before measurement		Position	L0.0 A97.8 H45.6
After measurement		Orientation	C > T-13.5
Load to viewer	On	Sat. region 2	
Inline movie	Off	Thickness	50 mm
Auto store images	On	Position	L0.0 P53.6 H81.9
Load to stamp segments	Off	Orientation	C > T-13.5
Load images to graphic	Off	Special sat.	None
segments		ı	
Auto open inline display	Off	System	
Start measurement without	On	Body	Off
further preparation	On	NE2	Off
Wait for user to start	Off	NE1	Off
		HEP	Off
Start measurements	single	HEA	Off
Routine		SP4	Off
Slice group 1		SP2	On
Slices	1	SP8	Off
Dist. factor	700 %	SP6	Off
Position	R0.5 P15.6 H103.5	SP3	On
Orientation	T > C-8.1	SP1	Off
Phase enc. dir.	A >> P	SP7	Off
Rotation	0.00 deg	SP5	Off
Phase oversampling	0 %	Positioning mode	FIX
FoV read	192 mm	Table position	H
FoV phase	100.0 %	Table position	0 mm
Slice thickness	4.0 mm	MSMA	S - C - T
TR	5920 ms		R >> L
TE	34.0 ms	Sagittal	A >> P
Averages	1	Coronal	
Concatenations	1	Transversal	F >> H
Filter	None	Coil Combine Mode	Sum of Squares
Coil elements	SP2,3	AutoAlign	
1	- ,-	Auto Coil Select	Default
Contrast	0"	—— Shim mode	Standard
MTC	Off	Adjust with body coil	Off
Flip angle	25 deg	Confirm freq. adjustment	Off
Fat suppr.	Fat sat.	Assume Silicone	Off
Averaging mode	Long term	? Ref. amplitude 1H	0.000 V
Reconstruction	Magnitude	Adjustment Tolerance	Auto
Measurements	820	Adjust volume	Auto
		Position	D0 5 D45 6 H402 5
Delay in TR	0 ms		R0.5 P15.6 H103.5
Multiple series	Off	Orientation	T > C-8.1
Resolution		Rotation	0.00 deg
Base resolution	128	R >> L	192 mm
Phase resolution	100 %	A >> P	192 mm
Phase partial Fourier	6/8	F >> H	4 mm
Interpolation	Off	Physio	
	OII	1st Signal/Mode	None
PAT mode	GRAPPA	1st Signal/Mode	None
Accel. factor PE	2	Angio	
Ref. lines PE	24	Flow mode	Single dir.
Matrix Coil Mode	Auto (Triple)	Encodings	1
Reference scan mode	Separate	Velocity enc.	8 cm/s
		Direction	Through plane
Distortion Corr.	Off	Magnitude sum	Off
Prescan Normalize	Off	1	<b>5</b>
Raw filter	Off	Sequence	
Elliptical filter	Off	Introduction	Off
Hamming	Off	Bandwidth	1776 Hz/Px
		Free echo spacing	Off
Geometry		Echo spacing	0.94 ms
Multi-slice mode	Interleaved		
Series	Ascending	EPI factor	128
		7/+	

	RF pulse type Gradient mode RF spoiling	Normal Fast On
	RF90 duration MB Number DummyScan Number FOV Shift Number Shift K0 Center Every Other Slice SER Number Venc Repetition Spoil factor Skew Direction DualBand Sat FOV Dir Venc Type(0off,1+-,20+,3on,4	5120 1 5 1 1 1 1 1 800 5 1 0 0
I	00++)	

\\USER\AMRIT\Liyong2\CSF\_mecha\localizer

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

SIEMENS: gre

TA: 0:13

PAT: Off

1A. 0.13	AT. OII VOXel Size. 1.1x1.0x	7.0 IIIII Rei. SNR. 1.00	SIEWENS. gre
		I Disease to	00.07
Properties		Phase resolution	90 %
Prio Recon	Off	Phase partial Fourier	Off
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	<b>.</b>	Prescan Normalize	On
Auto open inline display	Off	Normalize	Off
Start measurement without	Off	B1 filter	Off
further preparation	<b>5</b>	Raw filter	Off
Wait for user to start	Off	Elliptical filter	On
Start measurements	single	Mode	Inplane
ļ.	5g.5	Geometry	
Routine		- Multi-slice mode	Sequential
Slice group 1		Series	Interleaved
Slices	1		
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		=	0#
Slices	1	Body	Off
Dist. factor	20 %	NE2	On
Position	Isocenter	NE1	On
Orientation	Transversal	HEP	On
Phase enc. dir.	A >> P	HEA	On O#
Rotation	0.00 deg	SP4	Off
Slice group 3		SP2	Off
Slices	1	SP8	Off
Dist. factor	20 %	SP6	Off
Position	Isocenter	SP3	Off
Orientation	Coronal	SP1	On O"
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	8.6 ms	Sagittal	R >> L
TE	4.00 ms	Coronal	A >> P
Averages	2	Transversal	F >> H
Concatenations	3	Save uncombined	Off
Filter	Prescan Normalize, Elliptical	Coil Combine Mode	Adaptive Combine
	filter	AutoAlign	
Coil elements	HEA;HEP;NE1,2;SP1	Auto Coil Select	Default
Contrast			
TD	0 ms	Shim mode	Tune up
MTC	Off	Adjust with body coil	Off
	None	Confirm freq. adjustment	Off
Magn. preparation Flip angle		Assume Silicone	Off
. •	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	050	_ F >> H	350 mm
Base resolution	256	Physio	
		9/±	

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

\\USER\AMRIT\Liyong2\CSF\_mecha\t2\_haste\_sag\_p2

	Width	
	,	4
O#	Unfiltered images	Off
Off	B1 filter	Off
	Raw filter	Off
0	Elliptical filter	On
	Mode	Inplane
	ı	·
	•	
		Single shot
Off	Series	Interleaved
	Special sat	None
	Opecial sat.	
On	Tim CT made	O#
	Tim CT mode	Off
Off	System	
single		Off
	I	On
		On
400		On
		On
		Off
		Off
Sagittal		Off
A >> P		Off
0.00 deg		
0 %		Off
192 mm		On
100.0 %		Off
2.0 mm	SP5	Off
395 ms	Positioning mode	FIX
76 ms		H
1		0 mm
1		S - C - T
Normalize Ellintical filter	_	
		R >> L
TIEA,TIEF, INE 1,2,3FT		A >> P
		F >> H
Off		Off
None		Adaptive Combine
	3	
	Auto Coil Select	Default
	Shim mode	Tune up
		Off
		Off
Magnitude		Off
1	•	0.000 V
Each measurement		Auto
400		Isocenter
		Transversal
		0.00 deg
	R >> L	350 mm
Off	A >> P	263 mm
GRAPPA	F >> H	350 mm
	Dhysia	
		Maria
	1st Signal/Mode	None
	Dark blood	Off
Integrated		
Off	Resp. control	Off
	Inline	
		0"
		Off
_		Off
iviealum	Std-Dev-Cor	Off
20	Std-Dev-Tra	Off
_	100 0 % L1.9 A5.8 H28.8 Sagittal A >> P 0.00 deg 0 % 192 mm 100.0 % 2.0 mm 395 ms 76 ms 1 1 Normalize, Elliptical filter HEA;HEP;NE1,2;SP1  Off None 110 deg None None Off Long term Magnitude 1	Onf         Mode           Off         Geometry           Off         Multi-slice mode           Off         Special sat.           On         Tim CT mode           Off         System           Body         NE2           NE2         NE1           HEP         HEA           Sp4         Sp4           Sagittal         Sp2           A >> P         SP8           Sp6         0%           Sp7         SP3           192 mm         SP1           100.0 %         SP3           Sp8         SP4           Sp8         SP3           Sp9         SP8           Sp6         0%           Sp7         SP3           Sp7         SP4           Sp8         SP4           Sp8         SP4           Sp8         SP3           Sp9         SP3           Sp9         SP3           Sp9         SP3           Sp7         Sp7           2.0 mm         Sp7           395 ms         Positioning mode           Table position         Table position

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

#### Sequence

Introduction	On
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

\\USER\AMRIT\Liyong2\CSF\_mecha\ep2d\_venc4\_fast\_sag\_FH\_deep

USER: ep2d\_venc\_ms\_sbmb\_SAT

Voxel size: 1.5×1.5×4.0 mm Rel. SNR: 1.00

PAT: 2

TA: 1:19:55

Properties		Sat. region 1	
Prio Recon	Off	Thickness	50 mm
Before measurement		Position	L0.0 A97.8 H45.6
After measurement		Orientation	C > T-13.5
Load to viewer	On	Sat. region 2	
Inline movie	Off	Thickness	50 mm
Auto store images	On	Position	L0.0 P53.6 H81.9
	Off	Orientation	
Load to stamp segments			C > T-13.5
Load images to graphic	Off	Special sat.	None
segments		System	
Auto open inline display	Off	Body	Off
Start measurement without	On	NE2	On
further preparation			
Wait for user to start	Off	NE1	On
Start measurements	single	HEP	On
	3 -	HEA	On
Routine		SP4	Off
Slice group 1		SP2	Off
Slices	1	SP8	Off
Dist. factor	700 %	SP6	Off
Position	R0.5 A17.4 H77.0	SP3	Off
Orientation	Sagittal	SP1	Off
Phase enc. dir.	A >> P	SP7	Off
Rotation	0.00 deg	SP5	Off
Phase oversampling	0 %	Positioning mode	FIX
FoV read	192 mm	Table position	Н
FoV phase	100.0 %		
Slice thickness	4.0 mm	Table position	0 mm
TR	5920 ms	MSMA	S - C - T
TE	34.0 ms	Sagittal	R >> L
Averages	1	Coronal	A >> P
Concatenations	1	Transversal	F >> H
Filter	None	Coil Combine Mode	Sum of Squares
		AutoAlign	
Coil elements	HEA;HEP;NE1,2	Auto Coil Select	Default
Contrast			
MTC	Off	—— Shim mode	Standard
Flip angle	25 deg	Adjust with body coil	Off
Fat suppr.	Fat sat.	Confirm freq. adjustment	Off
Γαι δυρρι.	Fat 5at.	Assume Silicone	Off
Averaging mode	Long term	? Ref. amplitude 1H	0.000 V
Reconstruction	Magnitude	Adjustment Tolerance	Auto
Measurements	820	Adjust volume	
Delay in TR	0 ms	Position	R0.5 A17.4 H77.0
•		Orientation	
Multiple series	Off		Sagittal
Resolution		Rotation	0.00 deg
Base resolution	128	F >> H	192 mm
Phase resolution	100 %	A >> P	192 mm
	6/8	R >> L	4 mm
Phase partial Fourier		Dhysia	
Interpolation	Off	Physio	
PAT mode	GRAPPA	1st Signal/Mode	None
Accel, factor PE	2	Angio	
			Cingle dir
Ref. lines PE	24	Flow mode	Single dir.
Matrix Coil Mode	Auto (Triple)	Encodings	1
Reference scan mode	Separate	Velocity enc.	8 cm/s
Distortion Corr.	Off	Direction	F >> H
Prescan Normalize	Off	Magnitude sum	Off
	=	l -	
Raw filter	Off	Sequence	
Elliptical filter	Off	Introduction	Off
Hamming	Off	Bandwidth	1776 Hz/Px
•		Free echo spacing	Off
Geometry		Echo spacing	0.94 ms
Multi-slice mode	Interleaved Ascending	EPI factor	
Series			128

RF pulse type	Normal
Gradient mode	Fast
RF spoiling	On
RF90 duration MB Number DummyScan Number FOV Shift Number Shift K0 Center Every Other Slice SER Number Venc Repetition Spoil factor Skew Direction DualBand Sat FOV Dir Venc Type(0off,1+-,20+,3on,400++)	5120 1 5 1 1 1 1 1 800 5 1 0

\\USER\AMRIT\Liyong2\CSF\_mecha\ep2d\_venc4\_axial\_fom\_FH\_shallow

Voxel size: 1.5×1.5×4.0 mm Rel. SNR: 1.00

PAT: 2

TA: 1:19:55

USER: ep2d\_venc\_ms\_sbmb\_SAT

Properties		Sat. region 1	
Prio Recon	Off	Thickness	50 mm
Before measurement		Position	L0.0 A97.8 H45.6
After measurement		Orientation	C > T-13.5
Load to viewer	On	Sat. region 2	
Inline movie	Off	Thickness	50 mm
Auto store images	On	Position	L0.0 P53.6 H81.9
Load to stamp segments	Off	Orientation	C > T-13.5
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	NE2	On
further preparation		NE1	Off
Wait for user to start	Off	HEP	On
Start measurements	single		_
Destina		HEA	On
Routine		SP4	Off
Slice group 1		SP2	Off
Slices	1	SP8	Off
Dist. factor	700 %	SP6	Off
Position	R0.5 A3.9 H59.8	SP3	Off
Orientation	Transversal	SP1	Off
Phase enc. dir.	A >> P	SP7	Off
Rotation	0.00 deg	SP5	Off
Phase oversampling	0.00 dog		
FoV read	192 mm	Positioning mode	FIX
		Table position	Н
FoV phase	100.0 %	Table position	0 mm
Slice thickness	4.0 mm	MSMA	S - C - T
TR	5920 ms	Sagittal	R >> L
TE	34.0 ms	Coronal	A >> P
Averages	1	Transversal	F >> H
Concatenations	1		
Filter	None	Coil Combine Mode	Sum of Squares
Coil elements	HEA;HEP;NE2	AutoAlign	<del></del>
I	, ,	Auto Coil Select	Default
Contrast		—— Shim mode	Standard
MTC	Off	Adjust with body coil	Off
Flip angle	25 deg	Confirm freq. adjustment	Off
Fat suppr.	Fat sat.		
		Assume Silicone	Off
Averaging mode	Long term	? Ref. amplitude 1H	0.000 V
Reconstruction	Magnitude	Adjustment Tolerance	Auto
Measurements	820	Adjust volume	
Delay in TR	0 ms	Position	R0.5 A3.9 H59.8
Multiple series	Off	Orientation	Transversal
Decelution		Rotation	0.00 deg
Resolution		R >> L	192 mm
Base resolution	128	A >> P	192 mm
Phase resolution	100 %	F >> H	4 mm
Phase partial Fourier	6/8	1 >> 11	7 111111
Interpolation	Off	Physio	
		1st Signal/Mode	None
PAT mode	GRAPPA		
Accel. factor PE	2	Angio	
Ref. lines PE	24	Flow mode	Single dir.
Matrix Coil Mode	Auto (Triple)	Encodings	1
Reference scan mode	Separate	Velocity enc.	8 cm/s
		Direction	Through plane
Distortion Corr.	Off	Magnitude sum	Off
Prescan Normalize	Off	Magnitude 3dill	<b>5</b> 11
Raw filter	Off	Sequence	
Elliptical filter	Off	Introduction	Off
Hamming	Off	Bandwidth	1776 Hz/Px
	-	Free echo spacing	Off
Geometry		Echo spacing	0.94 ms
Multi-slice mode	Interleaved		
Series	Ascending	EPI factor	128
1	-	15/+	

	RF pulse type Gradient mode RF spoiling	Normal Fast On
	RF90 duration MB Number DummyScan Number FOV Shift Number Shift K0 Center Every Other Slice SER Number Venc Repetition Spoil factor Skew Direction DualBand Sat FOV Dir Venc Type(0off,1+-,20+,3on,4	5120 1 5 1 1 1 1 1 800 5 1 0 0
I	00++)	

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TA: 0:13 PA	AT: Off Voxel size: 1.1×1.0×	7.0 mm Rel. SNR: 1.00	SIEMENS: gre
Dramautica		Phase resolution	90 %
Properties	Off	- Phase partial Fourier	Off
Prio Recon Before measurement	Oii	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 Distortion Corr.	Off Off
Load to stamp segments	Off	Unfiltered images	Off
Load images to graphic	Off	Prescan Normalize	On
segments Auto open inline display	Off	Normalize	Off
Start measurement without	Off	B1 filter	Off
further preparation	OII	Raw filter	Off
Wait for user to start	Off	Elliptical filter	On
Start measurements	single	Mode	Inplane
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. Rotation	A >> P 0.00 deg	Tim CT mode	Off
Slice group 2	0.00 deg	System	
Slices	1	Body	Off
Dist. factor	20 %	NE2	On
Position	Isocenter	NE1	On
Orientation	Transversal	HEP	On
Phase enc. dir.	A >> P	HEA	On
Rotation	0.00 deg	Positioning mode	REF
Slice group 3	4	Table position	Н
Slices Dist. factor	1 20 %	Table position	0 mm
Position	Isocenter	MSMA	S-C-T
Orientation	Coronal	Sagittal	R >> L
Phase enc. dir.	R >> L	Coronal Transversal	A >> P F >> H
Rotation	0.00 deg	Save uncombined	Off
Phase oversampling	0 %	Coil Combine Mode	Adaptive Combine
FoV read	250 mm	AutoAlign	
FoV phase	100.0 %	Auto Coil Select	Default
Slice thickness TR	7.0 mm 8.6 ms	Shim mode	Tune up
TE	4.00 ms	Adjust with body coil	Off
Averages	2	Confirm freq. adjustment	Off
Concatenations	3	Assume Silicone	Off
Filter	Prescan Normalize, Elliptical	? Ref. amplitude 1H	0.000 V
	filter	Adjustment Tolerance	Auto
Coil elements	HEA;HEP;NE1,2	Adjust volume Position	Isocenter
Contrast		Orientation	Transversal
TD	0 ms	Rotation	0.00 deg
MTC	Off	R >> L	350 mm
Magn. preparation	None	A >> P	263 mm
Flip angle	20 deg	F >> H	350 mm
Fat suppr. Water suppr.	None None	Physio	
		1st Signal/Mode	None
Averaging mode	Short term	Segments	1
Reconstruction	Magnitude	Dark blood	Off
Measurements Multiple series	1 Each measurement		
1	Each measurement	Resp. control	Off
Resolution	256	_ Inline	
Base resolution	256	Subtract	Off
		47/.	

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

#### Sequence

Ocquerioc	
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 Gradient mode Excitation RF spoiling	Normal Normal Slice-sel. On

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TA: 0:41 PA	AT: 2 Voxel size: 1.0×1.0×	x2.0 mm Rel. SNR: 1.00 S	IEMENS: haste
Droportion		Width	4
Properties	0#	Unfiltered images	Off
Prio Recon	Off	B1 filter	Off
Before measurement		Raw filter	Off
After measurement	0.5	Elliptical filter	On
Load to viewer	On O"	Mode	Inplane
Inline movie	Off	Coomotivi	·
Auto store images	On	Geometry	
Load to stamp segments	Off	Multi-slice mode	Single shot
Load images to graphic	Off	Series	Interleaved
segments	0"	Special sat.	None
Auto open inline display	Off		
Start measurement without	On	Tim CT mode	Off
further preparation	0"		
Wait for user to start	Off	System	
Start measurements	single	Body	Off
Routine		NE2	On
Slice group 1		—   NE1	On
Slices	100	HEP	On
Dist. factor	0 %	HEA	On
Position	L1.9 A2.8 H5.8	Positioning mode	FIX
Orientation	Sagittal	Positioning mode	
Phase enc. dir.	A >> P	Table position	Н
Rotation	0.00 deg	Table position	0 mm
	0.00 deg 0 %	MSMA	S - C - T
Phase oversampling FoV read	192 mm	Sagittal	R >> L
	_	Coronal	A >> P
FoV phase	100.0 %	Transversal	F >> H
Slice thickness	2.0 mm	Save uncombined	Off
TR	395 ms	Coil Combine Mode	Adaptive Combine
TE	76 ms	AutoAlign	
Averages	1	Auto Coil Select	Default
Concatenations	1	Shim mode	Tuno un
Filter	Normalize, Elliptical filter		Tune up
Coil elements	HEA;HEP;NE1,2	Adjust with body coil	Off
Contrast		Confirm freq. adjustment	Off
MTC	Off	Assume Silicone	Off
Magn. preparation	None	? Ref. amplitude 1H	0.000 V
Flip angle	110 deg	Adjustment Tolerance	Auto
Fat suppr.	None	Adjust volume	
Water suppr.	None	Position	Isocenter
Restore magn.	Off	Orientation	Transversal
Restore magn.	OII 	Rotation	0.00 deg
Averaging mode	Long term	R >> L	350 mm
Reconstruction	Magnitude	A >> P	263 mm
Measurements	1	F >> H	350 mm
Multiple series	Each measurement	Physio	
		1st Signal/Mode	None
Resolution	400		
Base resolution	192	Dark blood	Off
Phase resolution	100 %	Poop control	Off
Phase partial Fourier	5/8	Resp. control	Oli
Interpolation	Off	Inline	
PAT mode	GRAPPA	Subtract	Off
Accel. factor PE	2	Std-Dev-Sag	Off
Ref. lines PE	24	Std-Dev-Cor	Off
Matrix Coil Mode	Auto (Triple)	Std-Dev-Tra	Off
		Std-Dev-Time	Off
Reference scan mode	Integrated	- MIP-Sag	Off
Image Filter	Off	MIP-Cor	Off
Distortion Corr.	Off	MIP-Tra	Off
Prescan Normalize	Off	MIP-Time	Off
Normalize	On	Save original images	On
Intensity	Medium	Jave original images	Oil
Cut off	20	Sequence	
Out on	20		

Introduction	On
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

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TA: 1.9 s P	AT: 2 Voxel size: 1.0×1.0×	2.0 mm Rel. SNR: 1.00 S	SIEMENS: haste
Properties		Width	4
Prio Recon	Off	<ul> <li>Unfiltered images</li> </ul>	Off
	Oli	B1 filter	Off
Before measurement		Raw filter	Off
After measurement		Elliptical filter	On
Load to viewer	On	Mode	Inplane
Inline movie	Off		
Auto store images	On	Geometry	
Load to stamp segments	Off	Multi-slice mode	Single shot
Load images to graphic	Off	Series	Interleaved
segments			
Auto open inline display	Off	Special sat.	None
Start measurement without	On		
further preparation	<b>5</b>	Tim CT mode	Off
Wait for user to start	Off	0.1	
		System	
Start measurements	single	Body	Off
Routine		NE2	On
Slice group 1		─   NE1	On
Slices	1	HEP	Off
Dist. factor	0 %	HEA	Off
Position	L5.6 P6.4 F39.5	Positioning mode	FIX
Orientation	T > S5.4 > C-4.6	Table position	Н
Phase enc. dir.	A >> P	Table position	0 mm
Rotation	0.00 deg	MSMA	S-C-T
Phase oversampling	0 %	Sagittal	R >> L
FoV read	192 mm	Coronal	A >> P
FoV phase	100.0 %		
Slice thickness	2.0 mm	Transversal	F >> H
	395 ms	Save uncombined	Off
TR		Coil Combine Mode	Adaptive Combine
TE	76 ms	AutoAlign	
Averages	1	Auto Coil Select	Default
Concatenations	1		<u>-</u>
Filter	Normalize, Elliptical filter	Shim mode	Tune up
Coil elements	NE1,2	Adjust with body coil	Off
	,	Confirm freq. adjustment	Off
Contrast		Assume Silicone	Off
MTC	Off	? Ref. amplitude 1H	0.000 V
Magn. preparation	None	Adjustment Tolerance	Auto
Flip angle	110 deg	Adjust volume	7 10.10
Fat suppr.	None	Position	Isocenter
Water suppr.	None	Orientation	
Restore magn.	Off		Transversal
		Rotation	0.00 deg
Averaging mode	Long term	R >> L	350 mm
Reconstruction	Magnitude	A >> P	263 mm
Measurements	1	F >> H	350 mm
Multiple series	Each measurement	Dhyaia	
·	Lacii incasarement	Physio	Mana
Resolution		1st Signal/Mode	None
Base resolution	192	Dark blood	Off
Phase resolution	100 %	Daik blood	
Phase partial Fourier	5/8	Resp. control	Off
	Off		
Interpolation	OII	Inline	
PAT mode	GRAPPA	Subtract	Off
Accel, factor PE	2	Std-Dev-Sag	Off
Ref. lines PE	24	Std-Dev-Cor	Off
Matrix Coil Mode		Std-Dev-Tra	Off
	Auto (Triple)	Std-Dev-Time	Off
Reference scan mode	Integrated	MIP-Sag	Off
Image Filter	Off	•	
Distortion Corr.	Off	MIP-Cor	Off
DISTOLUCII COIL.		MIP-Tra	Off
Prescan Normalize	Off	MIP-Time	Off
Prescan Normalize Normalize	Off On		
Prescan Normalize	Off	MIP-Time	Off

Introduction Dimension Contrasts Bandwidth Flow comp.	On 2D 1 592 Hz/Px No
Allowed delay	30 s
Echo spacing	5.82 ms
Turbo factor	192
RF pulse type	Fast
Gradient mode	Fast

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USER: ep2d\_venc\_ms\_sbmb\_SAT

Voxel size: 1.5×1.5×4.0 mm Rel. SNR: 1.00

TA: 40:27

PAT: 2

TA. 40.27 FAT. 2	VOXel Size. 1.5x1.5x4.0 IIII	iii kei. Siik. 1.00 OSEK. ep	
Properties		Sat. region 1	
Prio Recon	Off	Thickness	50 mm
Before measurement	Oli	Position	L0.0 A97.8 H45.6
		Orientation	C > T-13.5
After measurement	On		C > 1-13.5
Load to viewer	On O#	Sat. region 2	FO
Inline movie	Off	Thickness	50 mm
Auto store images	On O"	Position	R0.5 P69.2 H16.6
Load to stamp segments	Off	Orientation	C > T-13.5 > S0.4
Load images to graphic	Off	Special sat.	None
segments	0.4	System	
Auto open inline display	Off	Body	Off
Start measurement without	On	NE2	On
further preparation		NE1	On
Wait for user to start	Off	HEP	Off
Start measurements	single	HEA	Off
Pouting		ПСА	OII
Routine		Positioning mode	FIX
Slice group 1		Table position	Н
Slices	1	Table position	0 mm
Dist. factor	700 %	MSMA	S - C - T
Position	L5.6 P6.4 F39.5	Sagittal	R >> L
Orientation	T > S5.4 > C-4.6	Coronal	A >> P
Phase enc. dir.	A >> P	Transversal	F >> H
Rotation	0.00 deg		
Phase oversampling	0 %	Coil Combine Mode	Sum of Squares
FoV read	192 mm	AutoAlign	 D ( )
FoV phase	100.0 %	Auto Coil Select	Default
Slice thickness	4.0 mm	Shim mode	Standard
TR	5920 ms	Adjust with body coil	Off
TE	34.0 ms	Confirm freq. adjustment	Off
Averages	1	Assume Silicone	Off
Concatenations	1		0.000 V
Filter	·	? Ref. amplitude 1H	
	None	Adjustment Tolerance	Auto
Coil elements	NE1,2	Adjust volume	
Contrast		Position	L5.6 P6.4 F39.5
MTC	Off	Orientation	T > S5.4 > C-4.6
Flip angle	25 deg	Rotation	0.00 deg
Fat suppr.	Fat sat.	R >> L	192 mm
			192 mm
Averaging mode	Long term	F >> H	4 mm
Reconstruction	Magnitude	Dhysis	
Measurements	420	Physio	Maria
Delay in TR	0 ms	1st Signal/Mode	None
Multiple series	Off	Angio	
		Flow mode	Single dir.
Resolution		— Encodings	1
Base resolution	128	Velocity enc.	8 cm/s
Phase resolution	100 %	Direction	Through plane
Phase partial Fourier	6/8		
Interpolation	Off	Magnitude sum	Off
DAT	ODADD4	Sequence	
PAT mode	GRAPPA	Introduction	Off
Accel. factor PE	2	Bandwidth	1776 Hz/Px
Ref. lines PE	24	Free echo spacing	Off
Matrix Coil Mode	Auto (Triple)	Echo spacing	0.94 ms
Reference scan mode	Separate		
Distortion Corr.	Off	EPI factor	128
		RF pulse type	Normal
Prescan Normalize	Off	Gradient mode	Fast
Raw filter	Off	RF spoiling	On
Elliptical filter	Off		
Hamming	Off	RF90 duration	5120
Geometry		MB Number	1
Multi-slice mode	Interleaved	—— DummyScan Number	5
		FOV Shift Number	1
Series	Ascending	I	

Shift K0 Center	1
Every Other Slice	1
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++)	

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TA: 5:47 PA	AT: Off Voxel size: 1.5x	1.5×4.0 mm Rel. SNR: 1.00	SIEMENS: fl_pc
Properties		Body	Off
Prio Recon	Off	NE2	On
Before measurement		NE1	On O#
After measurement		HEP	Off
Load to viewer	On	HEA	Off
Inline movie	Off	Positioning mode	FIX
Auto store images	On	Table position	Н
Load to stamp segments	On	Table position	0 mm
Load images to graphic	Off	MSMA	S - C - T
segments		Sagittal	R >> L
Auto open inline display	Off	Coronal	A >> P
Start measurement without	On	Transversal	F >> H
further preparation		Coil Combine Mode	Sum of Squares
Wait for user to start	Off	AutoAlign	
Start measurements	single	Auto Coil Select	Default
I	- 3 -		
Routine		Shim mode	Standard
Slice group 1		Adjust with body coil	Off
Slices	1	Confirm freq. adjustment	Off
Dist. factor	20 %	Assume Silicone	Off
Position	L5.6 P6.4 F39.5	? Ref. amplitude 1H	0.000 V
Orientation	T > S5.4 > C-4.6	Adjustment Tolerance	Auto
Phase enc. dir.	A >> P	Adjust volume	
Rotation	0.00 deg	Position	L5.6 P6.4 F39.5
Phase oversampling	0 %	Orientation	T > S5.4 > C-4.6
FoV read	192 mm	Rotation	0.00 deg
FoV phase	100.0 %	R >> L	192 mm
Slice thickness	4.0 mm	A >> P	192 mm
TR	23.80 ms	F >> H	4 mm
TE	8.89 ms	Physio	
Averages	3	1st Signal/Mode	ECG/Trigger
Concatenations	1	Average cycle	No Signal ms
Filter	Elliptical filter	Captured cycle	-not set-
Coil elements	NE1,2	Acquisition window	900 ms
Contrast		Trigger pulse	1
Flip angle	10 deg	Trigger pulse	0 ms
· ····		Segments	1
Averaging mode	Long term	Phases	37
Reconstruction	Magnitude	I	O1
Measurements	1	Angio	
Multiple series	Each measurement	Flow mode	Single dir.
Resolution		Encodings	1
Base resolution	128	—— Velocity enc.	4 cm/s
Phase resolution	100 %	Direction	Through plane
Phase partial Fourier	Off	Rephased images	Off
Interpolation	Off	Magnitude images	On
		Magnitude sum	Off
PAT mode	None	Phase images	On
Matrix Coil Mode	Auto (CP)	Subtract	Off
Imaga Filtor	Off	Std-Dev-Sag	Off
Image Filter		Std-Dev-Gag Std-Dev-Cor	Off
Distortion Corr.	Off	Std-Dev-Col	Off
Prescan Normalize	Off	Std-Dev-Time	Off
Normalize	Off	MIP-Sag	Off
B1 filter	Off	MIP-Sag MIP-Cor	Off
Raw filter	Off		
Elliptical filter	On	MIP-Tra	Off Off
Mode	Inplane	MIP-Time	Off
Geometry		Save original images	On
Multi-slice mode	Sequential	Sequence	
Series	Interleaved	Introduction	On
		Dimension	2D
Special sat.	None	Asymmetric echo	Weak
System		Contrasts	1
<u> </u>		25/+	

Bandwidth	601 Hz/Px
Flow comp.	No
RF pulse type	Fast
Gradient mode	Whisper
RF spoiling	On