```
This hcp7t diff Session 3 includes:
Localizer
AAHScout 32ch
Localizer aligned
=== resting ===
BOLD REST3 PA
BOLD_PA_SE
BOLD AP SE
=== diffusion ===
DWI AP dir71
DWI PA dir71
DWI AP dir72
DWI PA dir72
=== additional reference scans ===
DWI_AP_SSref
DWI PA SSref
DWI AP SEGref
DWI PA SEGref
FieldMap_diffusion
```

Notes:

- 1. "Raw Filter" is listed as "On" in PDF throughout. But it was "Off". That is a bug in the protocol printout under VB17.
- 2. Phase enc. dir. for all "PA" scans is left as "A >> P", and the polarity inversion is accomplished by setting "Invert RO/PE polarity" flag to "On" in the Sequence: Special tab.
- 3. For the Diffusion scans, we have highlighted/annotated inline some confusing settings in the protocol printout for "Voxel size", "Slices", "Slice thickness", and "Slice multiplier".
- "Slices" and "Slice thickness" for the dMRI protocol as listed as 66 and 2.10 mm, respectively, but the actual acquisition is 132 slices that are 1.05 mm.

Why is it done this way?:

Siemens has a limit of 128 slices. So, we implemented a work-around using a "Slice multiplier" parameter in the Sequence: Special tab (which we set to 2) that allows us to tell Siemens "66, 2.1 mm slices", but the sequence actually acquires 132, 1.05mm slices.

\\US	SER\HCP\H	CP_Phase2_7T_autoAlign\S	ession 3 (diff_7T))\Localizer	
TA: 5.8 s	PAT: Off	Voxel size: 1.1×1.0×5.0 mm	Rel. SNR: 1.00	SIEMENS: gre	

Properties	Resolution			
Proporties Pr	Posolution			
Proporties Proposition Before measurement Off Phase partial Fourier Interpolation On On After measurement Off Phase partial Fourier Interpolation On On None Phase partial Fourier Interpolation On On PAT mode None On None Phase partial Fourier Interpolation On On PAT mode None On None Phase partial Fourier Interpolation On On PAT mode None None Phase partial Fourier Interpolation On On PAT mode None None Phase partial Fourier Interpolation On On PAT mode None None Phase partial Fourier Interpolation On On PAT mode None None Phase partial Fourier Interpolation On PAT mode None None Phase partial Fourier Interpolation On PAT mode None None Phase partial Fourier Interpolation Off Off Interpolation Off Interpolation Off Off Interpolation Off	Multiple series	Each measurement		Off
Proporties Pr		1	Inline	
Properties Pr		Magnitude	Resp. control	Off
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Properties				T
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Prio Recon Before measurement After measurement Load to viewer Inline movie Auto store images Load images to graphic segments Auto open inline display Start measurement without further preparation Wait for user to start Phase partial Fourier Interpolation On Interpolation On Image Filter Off Distortion Corr. Off Prescan Normalize Off Normalize Off B1 filter Raw filter Off Elliptical filter Mode Inplane Geometry	Start measurements	single		
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Properties Prio Recon Off Interpolation On				
Properties	Prio Recon	Off	·	
Phase resolution 90 %	Properties		Phase resolution	/-

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
MapIt	None
Contrasts	1

Sequence

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

\\USER\HCP\HCP_Phase2_7T_autoAlign\Session 3 (diff_7T)\AAHScout_32ch
TA: 8.9 s PAT: 4 Voxel size: 1.6×1.6×1.6 mm Rel. SNR: 1.00 SIEMENS: AALScout

Properties		Geometry	
Prio Recon	Off	Multi-slice mode	Sequential
Before measurement		Series	Ascending
After measurement	_	Table position	Н
Load to viewer	On	Table position	0 mm
Inline movie	Off	Inline Composing	Off
Auto store images	On		
Load to stamp segments	On	System	
Load images to graphic	On	V32	Off
segments		A32	On
Auto open inline display	Off	Positioning mode	REF
Start measurement without	Off	MSMA	S-C-T
further preparation	a	Sagittal	R >> L
Wait for user to start	Off	Coronal	A >> P
Start measurements	single	Transversal	F >> H
Routine		Save uncombined	Off
Slab group 1		Coil Combine Mode	Sum of Squares
Slabs	1	Auto Coil Select	Off
Dist. factor	20 %		
Position	L0.0 A50.0 H0.0	Shim mode	Tune up
Orientation	Sagittal	Adjust with body coil	Off
Phase enc. dir.	A >> P	Confirm freq. adjustment	Off
Rotation	0 deg	Assume Silicone	Off
AutoAlign	Head	? Ref. amplitude 1H	0.000 V
Phase oversampling	0 %	Adjustment Tolerance	Auto
Slice oversampling	0.0 %	Adjust volume	
Slices per slab	128	Position	Isocenter
FoV read	260 mm	Orientation	Transversal
FoV phase	100.0 %	Rotation	0.00 deg
Slice thickness	1.6 mm	R >> L	350 mm
TR	2.90 ms	A >> P	263 mm
TE	1.2 ms	F >> H	350 mm
Averages	1.2 113	Inline	
Concatenations	1	Inline	4.5.
Filter	None	Time to center	4.5 s
Coil elements	A32	MapIt	None
	7.02	Contrasts	1
Contrast Flip angle	9.0 deg	Sequence	
		Introduction	On
Averaging mode	Short term	Dimension	3D
Reconstruction	Magnitude	Asymmetric echo	Weak
Measurements	1	Bandwidth	550 Hz/Px
Resolution		DE pulso type	Foot
Base resolution	160	_ RF pulse type	Fast
Phase resolution	100 %	Gradient mode	Normal
Slice resolution	69 %	Excitation	Non-sel.
Phase partial Fourier	6/8	RF spoiling	On
Slice partial Fourier	6/8		
	J, U		
PAT mode	GRAPPA		
Accel. factor PE	2		
Ref. lines PE	24		
Accel. factor 3D	2		
Ref. lines 3D	24		
Reference scan mode	Integrated		
Image Filter	Off		
Distortion Corr.	Off		
Prescan Normalize	Off		
Normalize	Off		
B1 filter	Off		
Raw filter	Off		
Elliptical filter	Off		
-mptious into	OII		

\\USER\HCP\HCP_Phase2_7T_autoAlign\Session 3 (diff_7T)\Localizer_aligned TA: 0:23 PAT: Off Voxel size: 1.1×1.0×5.0 mm Rel. SNR: 1.00 SIEMENS: gre

Properties		Phase resolution	90 %
Prio Recon	Off	Phase partial Fourier	Off
Before measurement	On	Interpolation	On
After measurement		PAT mode	None
Load to viewer	On		
Inline movie	Off	Image Filter	Off
	On	Distortion Corr.	Off
Auto store images		Prescan Normalize	Off
Load to stamp segments Load images to graphic	On On	Normalize	Off
	On	B1 filter	Off
segments	0#	Raw filter	Off
Auto open inline display	Off Off	Elliptical filter	On
Start measurement without	Off	Mode	Inplane
further preparation	0"		•
Wait for user to start	Off	Geometry	
Start measurements	single	Multi-slice mode	Sequential
Routine		Series	Interleaved
Slice group 1	_	Saturation mode	Standard
Slices	5	Special sat.	None
Dist. factor	400 %		
Position	Isocenter	Table position	Н
Orientation	Sagittal	Table position	0 mm
Phase enc. dir.	A >> P	Inline Composing	Off
Rotation	0.00 deg		
Slice group 2		Tim CT mode	Off
Slices	5	System	
Dist. factor	600 %	V32	Off
Position	Isocenter	A32	On
Orientation	Transversal		<u></u>
Phase enc. dir.	A >> P	Positioning mode	FIX
Rotation	0.00 deg	MSMA	S - C - T
Slice group 3	5	Sagittal	R >> L
Slices	5	Coronal	A >> P
Dist. factor	300 %	Transversal	F >> H
Position	Isocenter	Save uncombined	Off
Orientation	Coronal	Coil Combine Mode	Adaptive Combine
Phase enc. dir.	R >> L	AutoAlign	Head > Brain
Rotation	0.00 deg	Auto Coil Select	Off
Phase oversampling	0.00 dog		
FoV read	250 mm	Shim mode	Tune up
FoV phase	100.0 %	Adjust with body coil	Off
Slice thickness	5.0 mm	Confirm freq. adjustment	Off
TR	6.2 ms	Assume Silicone	Off
TE	2.67 ms	? Ref. amplitude 1H	0.000 V
Averages	1	Adjustment Tolerance	Auto
Concatenations	15	Adjust volume	
Filter	Elliptical filter	Position	Isocenter
Coil elements	A32	Orientation	Transversal
Con elenients	ASZ	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	Dhysic	
Flip angle	10 deg	Physio	None
Fat suppr.	None	1st Signal/Mode	None
Water suppr.	None	Segments	1
SWI	Off	Tagging	None
		Dark blood	Off
Averaging mode	Short term		∵
Reconstruction	Magnitude	Resp. control	Off
Measurements	1	Inline	
Multiple series	Each measurement		Off
Resolution		Subtract Liver registration	_
	256	Liver registration	Off 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
MapIt	None
Contrasts	1

Sequence

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

\\USER\HC	P\HCP_Phase2_7T_autoAligr	n\Session 3 (diff_7T)\BOLD	D_REST3_PA
TA: 16:20 PAT: 2	Voxel size: 1.6×1.6×1.6 mm	Rel. SNR: 1.00 USER:	hcp_v2_mbep2d_bold
roperties		Special sat.	None
Prio Recon	Off	Table position	Н
Before measurement		Table position	0 mm
After measurement		Inline Composing	Off
Load to viewer	On		
Inline movie	Off	System	
Auto store images	On	V32	Off
Load to stamp segments	Off	A32	On
Load images to graphic	Off	Positioning mode	FIX
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	On	Coil Combine Mode	Sum of Squares
Start measurements	single	AutoAlign	Head > Brain
	- 9 -	Auto Coil Select	Default
outine			
Slice group 1		Shim mode	Advanced
Slices	85	Adjust with body coil	Off
Dist. factor	0 %	Confirm freq. adjustment	Off
Position	L0.0 P12.0 H13.0	Assume Silicone	Off
Orientation	T > C-20.0	? Ref. amplitude 1H	0.000 V
Phase enc. dir.	A >> P	Adjustment Tolerance	Auto
Rotation	-0.52 deg	Adjust volume	
Phase oversampling	0 %	! Position	L0.7 P13.2 H9.5
FoV read	208 mm	! Orientation	T > C-15.6 > S0.3
FoV phase	100.0 %	! Rotation	0.00 deg
Slice thickness	1.60 mm	! R >> L	130 mm
TR	1000 ms	! A >> P	170 mm
TE	22.2 ms	! F >> H	120 mm
Multi-band accel. factor	5	Physio	
Filter	None	1st Signal/Mode	None
Coil elements	A32		140110
ontrast		BOLD	
MTC	Off	GLM Statistics	Off
Magn. preparation	None	Dynamic t-maps	Off
Flip angle	45 deg	Starting ignore meas	0
Fat suppr.	Fat sat.	Ignore after transition	0
		Model transition states	On
Averaging mode	Long term	Temp. highpass filter	On
Reconstruction	Magnitude	Threshold	4.00
Measurements	900	Paradigm size	3

Load to stamp segments	Off	A32	On
Load images to graphic	Off	Positioning mode	FIX
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	On	Coil Combine Mode	Sum of Squares
Start measurements	single	AutoAlign	Head > Brain
Gtart measurements	Single	•	
Routine		Auto Coil Select	Default
Slice group 1		Shim mode	Advanced
Slices	85	Adjust with body coil	Off
Dist. factor	0 %	Confirm freq. adjustment	Off
Position	L0.0 P12.0 H13.0	Assume Silicone	Off
Orientation	T > C-20.0	? Ref. amplitude 1H	0.000 V
Phase enc. dir.	A >> P	Adjustment Tolerance	Auto
Rotation	-0.52 deg	Adjust volume	Auto
Phase oversampling	0.32 dog	! Position	LO 7 D12 2 H0 5
FoV read	208 mm	! Orientation	L0.7 P13.2 H9.5 T > C-15.6 > S0.3
FoV read FoV phase	100.0 %		
Slice thickness		! Rotation	0.00 deg
	1.60 mm 1000 ms	! R >> L	130 mm
TR		! A >> P	170 mm
TE	22.2 ms	! F >> H	120 mm
Multi-band accel. factor	5	Physio	
Filter	None	1st Signal/Mode	None
Coil elements	A32		140116
Contrast		BOLD	
MTC	Off	GLM Statistics	Off
Magn. preparation	None	Dynamic t-maps	Off
Flip angle	45 deg	Starting ignore meas	0
· · ·	Fat sat.	Ignore after transition	0
Fat suppr.	Fal Sal.	Model transition states	On
Averaging mode	Long term	Temp. highpass filter	On
Reconstruction	Magnitude	Threshold	4.00
Measurements	900	Paradigm size	3
Delay in TR	0 ms	Meas[1]	Baseline
Multiple series	Off	Meas[2]	Baseline
•	5	Meas[3]	Active
Resolution		Motion correction	
Base resolution	130		Off Off
Phase resolution	100 %	Spatial filter	Oil
Phase partial Fourier	7/8	Sequence	
Interpolation	Off	Introduction	Off
		Bandwidth	1924 Hz/Px
PAT mode	GRAPPA	Flow comp.	No
Accel. factor PE	2	Free echo spacing	Off
Ref. lines PE	96	Echo spacing	0.64 ms
Reference scan mode	GRE		
Distortion Corr.	Off	SIR accel. factor	1
Prescan Normalize	_	EPI factor	130
Raw filter	Off	Gradient mode	Normal
	On O#	RF spoiling	Off
Elliptical filter	Off		
Hamming	Off	Excite pulse duration	5760 us
Geometry		Slice multiplier	1
		T AA DOL LOG	2.4/E-V/
•	Interleaved	Multi-band PE shift	3 1/FoV
Multi-slice mode Series	Interleaved Interleaved	zBlip scheme MB kernel size	0

MB knockout band	0
No. of interleaved TEs	0
RF pulse shape	1
EPI noise scans	0
EPI full reference scan	0
Single-band images	On
MB LeakBlock kernel	Off
MB RF phase scramble	On
SENSE1 coil combine	Off
Log physiology to file	Off
Invert RO/PE polarity	On
Save reduced raw data	On
Readout slice trace	Off
Disable ramp sampling	Off
PF omits higher k-space	Off
Online multi-band recon.	Online
FFT scale factor	0.60
GRE iPAT ref. FA	12.0 deg
Send B1 shim trigger	Never
Triggering scheme	Standard
Starting ignore meas	0
Paradigm size	0
Multiplier	0

\\USER\HCP\HCP_Phase2_7T_autoAlign\Session 3 (diff_7T)\BOLD_PA_SE

TA: 1:26 PAT: 2 Voxel size: 1.6x1.6x1.6 mm Rel. SNR: 1.00 USER: hcp_v2_mbep2d_se

Properties		Series	Interleaved
Prio Recon	Off	Special sat.	None
Before measurement		Table position	H
After measurement		Table position	0 mm
Load to viewer	On	Inline Composing	Off
Inline movie	Off		011
Auto store images	On O"	System	
Load to stamp segments	Off	V32	Off
Load images to graphic	Off	A32	On
segments	Off	Positioning mode	FIX
Auto open inline display Start measurement without	On	MSMA	S - C - T
further preparation	On	Sagittal	R >> L
Wait for user to start	Off	Coronal	A >> P
Start measurements	single	Transversal	F >> H
	onigio	Coil Combine Mode	Sum of Squares
Routine		AutoAlign	Head > Brain
Slice group 1		Auto Coil Select	Default
Slices	85	Shim mode	Advanced
Dist. factor	0 %	Adjust with body coil	Off
Position	L0.0 P12.0 H13.0	Confirm freq. adjustment	Off
Orientation Phase enc. dir.	T > C-20.0 A >> P	Assume Silicone	Off
		? Ref. amplitude 1H	0.000 V
Rotation Phase oversampling	-0.51 deg 0 %	Adjustment Tolerance	Auto
Friase oversampling FoV read	208 mm	Adjust volume	
FoV phase	100.0 %	! Position	L0.7 P13.2 H9.5
Slice thickness	1.60 mm	! Orientation	T > C-15.6 > S0.3
TR	3000 ms	! Rotation	0.00 deg
TE	60 ms	! R >> L	130 mm
Multi-band accel. factor	5	! A >> P	170 mm
Filter	None	! F >> H	120 mm
Coil elements	A32	Physio	
Contrast		1st Signal/Mode	None
MTC	Off	BOLD	
Magn. preparation	None	GLM Statistics	Off
Flip angle	90 deg	Dynamic t-maps	Off
Refocus flip angle	180 deg	Starting ignore meas	0
Fat suppr.	None	Ignore after transition	0
Grad. rev. fat suppr.	Disabled	Model transition states	On
		Temp. highpass filter	On
Averaging mode	Long term	Threshold	4.00
Reconstruction Measurements	Magnitude	Paradigm size	3
	3 0 ms	Meas[1]	Baseline
Delay in TR Multiple series	Off	Meas[2]	Baseline
•	Oli	Meas[3]	Active
Resolution		Motion correction	Off
Base resolution	130	Spatial filter	Off
Phase resolution	100 %	Sequence	
Phase partial Fourier	7/8	Introduction	Off
Interpolation	Off	Bandwidth	1924 Hz/Px
PAT mode	GRAPPA	Free echo spacing	Off
Accel. factor PE	2	Echo spacing	0.64 ms
Ref. lines PE	96		
Reference scan mode	GRE	SIR accel. factor	1
		EPI factor	130
Distortion Corr.	Off	Gradient mode	Normal
Prescan Normalize	Off	RF spoiling	Off
Raw filter	On O#	Excite pulse duration	4480 us
Elliptical filter	Off	Refocus pulse duration	10240 us
Hamming	Off	Slice multiplier	1
Geometry		Multi-band PE shift	3 1/FoV
Multi-slice mode	Interleaved	zBlip scheme	0
		8/+	

MB kernel size	5
MB knockout band	0
RF pulse shape	1
EPI noise scans	0
EPI full reference scan	0
Single-band images	On
MB LeakBlock kernel	Off
MB RF phase scramble	Off
Time-shifted MB RF	Off
SENSE1 coil combine	Off
Log physiology to file	Off
Invert RO/PE polarity	On
Save reduced raw data	On
Readout slice trace	Off
Disable ramp sampling	Off
Online multi-band recon.	Online
FFT scale factor	1.00
GRE iPAT ref. FA	12.0 deg
Send B1 shim trigger	Never
Triggering scheme	Standard
Starting ignore meas	0
Paradigm size	2
Multiplier	1
Step [1]	1
Step [2]	0

//	USER\HC	P\HCP_Phase2_7T_autoAli	gn\Session 3 (diff	_7T)\BOLD_AP_SE	
TA: 1:26	PAT: 2	Voxel size: 1.6×1.6×1.6 mm	Rel. SNR: 1.00	USER: hcp_v2_mbep2d_se	
Properties			Series	Interleaved	
Prio Recon		Off	Special sat.	None	
Before measuremen			Table position Table position	H 0 mm	

Properties		Series	Interleaved
Prio Recon	Off	Special sat.	None
Before measurement			
After measurement		Table position	H
Load to viewer	On	Table position	0 mm
Inline movie	Off	Inline Composing	Off
Auto store images	On	System	
Load to stamp segments	Off	V32	Off
Load images to graphic	Off	A32	On
segments		Desitioning and	FIV
Auto open inline display	Off	Positioning mode	FIX
Start measurement without	On	MSMA	S - C - T
further preparation		Sagittal	R >> L
Wait for user to start	Off	Coronal	A >> P
Start measurements	single	Transversal	F >> H
Routine		Coil Combine Mode	Sum of Squares
Slice group 1		AutoAlign	Head > Brain
Slices	85	Auto Coil Select	Default
Dist. factor	0 %	Shim mode	Advanced
Position	L0.0 P12.0 H13.0	Adjust with body coil	Off
Orientation	T > C-20.0	Confirm freq. adjustment	Off
Phase enc. dir.	A >> P	Assume Silicone	Off
Rotation	-0.51 deg	? Ref. amplitude 1H	0.000 V
Phase oversampling	-0.31 deg 0 %	Adjustment Tolerance	Auto
FoV read	208 mm	Adjust volume	
FoV phase	100.0 %	! Position	L0.7 P13.2 H9.5
Slice thickness	1.60 mm	! Orientation	T > C-15.6 > S0.3
TR	3000 ms	! Rotation	0.00 deg
TE TE	60 ms	! R >> L	130 mm
Multi-band accel. factor	5	! A >> P	170 mm
Filter	None	! F >> H	120 mm
Coil elements	A32	D	
ı	A32	Physio 1st Signal/Mode	None
Contrast		1	None
MTC	Off	BOLD	
Magn. preparation	None	GLM Statistics	Off
Flip angle	90 deg	Dynamic t-maps	Off
Refocus flip angle	180 deg	Starting ignore meas	0
Fat suppr.	None	Ignore after transition	0
Grad. rev. fat suppr.	Disabled	Model transition states	On
Averaging mode	Long term	Temp. highpass filter	On
Reconstruction	Magnitude	Threshold	4.00
Measurements	3	Paradigm size	3
Delay in TR	0 ms	Meas[1]	Baseline
Multiple series	Off	Meas[2]	Baseline
		Meas[3]	Active
Resolution	400	Motion correction	Off
Base resolution	130	Spatial filter	Off
Phase resolution	100 %	Sequence	
Phase partial Fourier	7/8	Introduction	Off
Interpolation	Off	Bandwidth	1924 Hz/Px
PAT mode	GRAPPA	Free echo spacing	Off
Accel. factor PE	2	Echo spacing	0.64 ms
Ref. lines PE	96		
Reference scan mode	GRE	SIR accel. factor	1
		EPI factor	130
Distortion Corr.	Off	Gradient mode	Normal
Prescan Normalize	Off	RF spoiling	Off
Raw filter			
	On	Evoite pulse duration	4480 ue
Elliptical filter	On Off	Excite pulse duration	4480 us
	On	Refocus pulse duration	10240 us
Elliptical filter Hamming	On Off	Refocus pulse duration Slice multiplier	10240 us 1
Elliptical filter	On Off	Refocus pulse duration	10240 us

MB kernel size	5
MB knockout band	0
RF pulse shape	1
EPI noise scans	0
EPI full reference scan	0
Single-band images	On
MB LeakBlock kernel	Off
MB RF phase scramble	Off
Time-shifted MB RF	Off
SENSE1 coil combine	Off
Log physiology to file	Off
Invert RO/PE polarity	Off
Save reduced raw data	On
Readout slice trace	Off
Disable ramp sampling	Off
Online multi-band recon.	Online
FFT scale factor	1.00
GRE iPAT ref. FA	12.0 deg
Send B1 shim trigger	Never
Triggering scheme	Standard
Starting ignore meas	0
Paradigm size	2
Multiplier	1
Step [1]	1
Step [2]	0

\\USER\HCP\HCP_Phase2_7T_autoAlign\Session 3 (diff_7T)\DWI_AP_dir71

USER: hcp_v2_mbep2d_diff

Voxel size: 1.1×1.1×2.1 mm Rel. SNR: 1.00

TA: 10:07

Properties		Multi-slice mode Series	Interleaved Interleaved
Prio Recon	Off	Selles	·····
Before measurement		Special sat.	None
After measurement		T-bliti	
Load to viewer	On	Table position	Н
Inline movie	Off	Table position	0 mm
Auto store images	On	Inline Composing	Off
Load to stamp segments	Off	System	
Load images to graphic	Off	V32	Off
segments	Oli	A32	On
	O#	A32	On
Auto open inline display	Off	Positioning mode	FIX
Start measurement without	On	MSMA	S - C - T
further preparation	0"	Sagittal	R >> L
Wait for user to start	Off	Coronal	A >> P
Start measurements	single	Transversal	F >> H
Coutine			
		Coil Combine Mode	Sum of Squares
Slice group 1		AutoAlign	Head > Brain
Slices	<mark>66</mark>	Auto Coil Select	Default
Dist. factor	0 %	Shim mode	Advanced
Position	L0.0 P12.0 H13.0		
Orientation	T > C-20.0	Adjust with body coil	Off
Phase enc. dir.	A >> P	Confirm freq. adjustment	Off
Rotation	0.00 deg	Assume Silicone	Off
Phase oversampling	0 %	? Ref. amplitude 1H	0.000 V
FoV read	210 mm	Adjustment Tolerance	Auto
FoV phase	100.0 %	Adjust volume	
Slice thickness	2.10 mm	! Position	L0.7 P13.2 H9.5
		! Orientation	T > C-15.6 > S0.3
TR	7000 ms	! Rotation	0.00 deg
TE	71.2 ms	! R >> L	130 mm
Averages	1	! A >> P	170 mm
Multi-band accel. factor	2		
Filter	None	! F >> H	120 mm
Coil elements	A32	Physio	
		1st Signal/Mode	None
Contrast			None
MTC	Off	Diff	
Magn. preparation	None	Diffusion mode	Free
Flip angle	90 deg	Diff. weightings	1
Refocus flip angle	180 deg	b-value	2000 s/mm²
Fat suppr.	None	Diff. weighted images	On
Grad. rev. fat suppr.	Disabled	Trace weighted images	Off
		Average ADC maps	Off
Averaging mode	Long term		_
Reconstruction	Magnitude	Individual ADC maps	Off
Measurements	1	FA maps	Off
Delay in TR	0 ms	Mosaic	On
Multiple series	Off	Tensor	Off
•	J.,	Noise level	40
Resolution		Diff. directions	71
Base resolution	200		
Phase resolution	100 %	Sequence	
Phase partial Fourier	6/8	Introduction	Off
Interpolation	Off	Bandwidth	1388 Hz/Px
PAT mode	GRAPPA	Free echo spacing	Off
Accel. factor PE	3	Echo spacing	0.82 ms
Ref. lines PE	66	SIR accel. factor	1
Reference scan mode	GRE	EPI factor	200
Distortion Corr.	Off	Gradient mode	Normal
Prescan Normalize	Off	RF spoiling	Off
Raw filter	On	Excite pulse duration	5120 us
Elliptical filter	Off		
Hamming	Off	Refocus pulse duration	10240 us
Hallining	Jii	Slice multiplier Multi-band PE shift	2
		I Multi band DE chiff	0 1/FoV

MB RF pulse shift	1920 us
zBlip scheme	0
MB kernel size	0
MB knockout band	0
RF pulse shape	1
EPI noise scans	0
EPI full reference scan	0
Diffusion Scheme	Monopolar
Single-band images	On
MB LeakBlock kernel	Off
MB RF phase scramble	Off
Time-shifted MB RF	On
SENSE1 coil combine	On
Log physiology to file	Off
Invert RO/PE polarity	Off
Save reduced raw data	On
Readout slice trace	Off
Disable ramp sampling	Off
User defined diff. delta	Off
Online multi-band recon.	Online
FFT scale factor	1.00
Diff. spoil factor	3.0
GRE iPAT ref. FA	12.0 deg
Send B1 shim trigger	Never

\\USER\HCP\HCP_Phase2_7T_autoAlign\Session 3 (diff_7T)\DWI_PA_dir71

USER: hcp_v2_mbep2d_diff

Voxel size: 1.1×1.1×2.1 mm Rel. SNR: 1.00

TA: 10:07

Properties		Multi-slice mode Series	Interleaved Interleaved
Prio Recon	Off		
Before measurement		Special sat.	None
After measurement		Table position	Н
Load to viewer	On	Table position	0 mm
Inline movie	Off	Inline Composing	Off
Auto store images	On	Inline Composing	Oli
Load to stamp segments	Off	System	
Load images to graphic	Off	V32	Off
segments		A32	On
Auto open inline display	Off		
Start measurement without	On	Positioning mode	FIX
further preparation		MSMA	S - C - T
Wait for user to start	Off	Sagittal	R >> L
Start measurements	single	Coronal	A >> P
	onigio	Transversal	F >> H
outine		Coil Combine Mode	Sum of Squares
Slice group 1		AutoAlign	Head > Brain
Slices	66	Auto Coil Select	Default
Dist. factor	0 %		
Position	L0.0 P12.0 H13.0	Shim mode	Advanced
Orientation	T > C-20.0	Adjust with body coil	Off
Phase enc. dir.	A >> P	Confirm freq. adjustment	Off
Rotation	0.00 deg	Assume Silicone	Off
Phase oversampling	0.00 deg 0 %	? Ref. amplitude 1H	0.000 V
FoV read	210 mm	Adjustment Tolerance	Auto
		Adjust volume	
FoV phase	100.0 %	! Position	L0.7 P13.2 H9.5
Slice thickness	2.10 mm	! Orientation	T > C-15.6 > S0.3
TR	7000 ms	! Rotation	0.00 deg
TE	71.2 ms	! R >> L	130 mm
Averages	1	! A >> P	170 mm
Multi-band accel. factor	2		_
Filter	None	! F >> H	120 mm
Coil elements	A32	Physio	
ontrast		1st Signal/Mode	None
MTC	Off	'	
Magn. preparation	None	Diff	
Flip angle		Diffusion mode	Free
	90 deg	Diff. weightings	1
Refocus flip angle	180 deg	b-value	2000 s/mm ²
Fat suppr.	None	Diff. weighted images	On
Grad. rev. fat suppr.	Disabled	Trace weighted images	Off
Averaging mode	Long term	Average ADC maps	Off
Reconstruction	Magnitude	Individual ADC maps	Off
Measurements	1	FA maps	Off
	0 ms	Mosaic	On
Delay in TR	0 ms	Tensor	Off
Multiple series	Off	Noise level	40
esolution		Diff. directions	71
Base resolution	200		
Phase resolution	100 %	Sequence	
Phase partial Fourier	6/8	Introduction	Off
Interpolation	Off		
		Bandwidth	1388 Hz/Px
PAT mode	GRAPPA	Free echo spacing	Off
Accel. factor PE	3	Echo spacing	0.82 ms
Ref. lines PE	66	SIR accel. factor	1
Reference scan mode	GRE	EPI factor	200
Distortion Corr.	Off	Gradient mode	Normal
Prescan Normalize	Off	RF spoiling	Off
Raw filter	On	Excite pulse duration	5120 us
Elliptical filter	Off		
	Off		
•			
Hamming Geometry		Refocus pulse duration Slice multiplier Multi-band PE shift	10240 us <mark>2</mark> 0 1/FoV

MB RF pulse shift	1920 us
zBlip scheme	0
MB kernel size	0
MB knockout band	0
RF pulse shape	1
EPI noise scans	0
EPI full reference scan	0
Diffusion Scheme	Monopolar

Single-band images On MB LeakBlock kernel Off MB RF phase scramble Off Time-shifted MB RF On SENSE1 coil combine On Log physiology to file Off Invert RO/PE polarity On Save reduced raw data On Off Readout slice trace Off Disable ramp sampling User defined diff. delta Off Online Online multi-band recon. FFT scale factor 1.00 Diff. spoil factor 3.0 GRE iPAT ref. FA 12.0 deg Send B1 shim trigger Never

\\USER\HCP\HCP_Phase2_7T_autoAlign\Session 3 (diff_7T)\DWI_AP_dir72

USER: hcp_v2_mbep2d_diff

Voxel size: 1.1×1.1×2.1 mm Rel. SNR: 1.00

TA: 10:14

TA. 10.14 PAT. 3	VOXELSIZE. 1.1×1.1× <mark>Z.1 IIIIII</mark>	Rei. SNR. 1.00 USER.	ncp_vz_mbepza_am
Properties	0.0	Multi-slice mode Series	Interleaved Interleaved
Prio Recon	Off		•••
Before measurement		Special sat.	None
After measurement		Table position	H
Load to viewer	On	Table position	0 mm
Inline movie	Off	Inline Composing	Off
Auto store images	On		0.11
Load to stamp segments	Off	System	
Load images to graphic	Off	V32	Off
segments		A32	On
Auto open inline display	Off	Desitioning mode	FIX
Start measurement without	On	Positioning mode	
further preparation		MSMA	S - C - T
Wait for user to start	Off	Sagittal	R >> L
Start measurements	single	Coronal	A >> P
Douting		Transversal	F >> H
Routine		Coil Combine Mode	Sum of Squares
Slice group 1	-	AutoAlign	Head > Brain
Slices	<mark>66</mark>	Auto Coil Select	Default
Dist. factor	0 %	Shim mode	Advanced
Position	L0.0 P12.0 H13.0	Adjust with body coil	Off
Orientation	T > C-20.0	Confirm freq. adjustment	Off
Phase enc. dir.	A >> P		
Rotation	0.00 deg	Assume Silicone	Off
Phase oversampling	0 %	? Ref. amplitude 1H	0.000 V
FoV read	210 mm	Adjustment Tolerance	Auto
FoV phase	100.0 %	Adjust volume	
Slice thickness	2.10 mm	! Position	L0.7 P13.2 H9.5
TR	7000 ms	! Orientation	T > C-15.6 > S0.3
TE	71.2 ms	! Rotation	0.00 deg
Averages	1	! R >> L	130 mm
Multi-band accel. factor	2	! A >> P	170 mm
Filter	None	! F >> H	120 mm
Coil elements	A32	Dhysia	
Coll elements	AJZ	Physio	
Contrast		1st Signal/Mode	None
MTC	Off	Diff	
Magn. preparation	None	Diffusion mode	Free
Flip angle	90 deg	Diff. weightings	1
Refocus flip angle	180 deg	b-value	2000 s/mm²
Fat suppr.	None	Diff. weighted images	On
Grad. rev. fat suppr.	Disabled	Trace weighted images	Off
		Average ADC maps	Off
Averaging mode	Long term	Individual ADC maps	Off
Reconstruction	Magnitude	<u> </u>	Off
Measurements	1	FA maps	
Delay in TR	0 ms	Mosaic	On O#
Multiple series	Off	Tensor	Off
Posalution		Noise level	40
Resolution	200	Diff. directions	72
Base resolution	200		
Phase resolution	100 %	Sequence	
Phase partial Fourier	6/8	Introduction	Off
Interpolation	Off	Bandwidth	1388 Hz/Px
PAT mode	GRAPPA	Free echo spacing	Off
Accel. factor PE	3	Echo spacing	0.82 ms
Ref. lines PE	66		
Reference scan mode	GRE	SIR accel. factor	1
Neierence Scan mode	GNE	EPI factor	200
Distortion Corr.	Off	Gradient mode	Normal
Prescan Normalize	Off	RF spoiling	Off
Raw filter	On	Excite pulse duration	5120 us
Elliptical filter	Off	Refocus pulse duration	10240 us
Hamming	Off	Slice multiplier	7 43
1		Multi-band PE shift	0 1/FoV
Geometry		Multi-parid I'E SIIIIt	0 1/1 UV

MB RF pulse shift zBlip scheme	1920 us 0
MB kernel size	0
MB knockout band	0
RF pulse shape	1
EPI noise scans	0
EPI full reference scan	0
Diffusion Scheme	Monopolar
Single-band images	On
MB LeakBlock kernel	Off
MB RF phase scramble	Off
Time-shifted MB RF	On
SENSE1 coil combine	On
Log physiology to file	Off
Invert RO/PE polarity	Off
Save reduced raw data	On
Readout slice trace	Off
Disable ramp sampling	Off
User defined diff. delta	Off
Online multi-band recon.	Online
FFT scale factor	1.00
Diff. spoil factor	3.0
GRE iPAT ref. FA	12.0 deg
Send B1 shim trigger	Never

 $\verb|\USER\HCP\HCP_Phase2_7T_autoAlign\Session 3 (diff_7T)\DWI_PA_dir72| \\$

		Multipling	Interlegued
Prio Page	0#	Multi-slice mode Series	Interleaved Interleaved
Prio Recon Before measurement	Off	Special sat.	None
After measurement			
Load to viewer	On	Table position	Н
Inline movie	Off	Table position	0 mm
Auto store images	On	Inline Composing	Off
Load to stamp segments	Off	System	
Load images to graphic	Off	V32	Off
segments		A32	On
Auto open inline display	Off		
Start measurement without	On	Positioning mode	FIX
further preparation	.	MSMA	S - C - T
Wait for user to start	Off	Sagittal	R >> L
Start measurements	single	Coronal	A >> P
	Single	Transversal	F >> H
Routine		Coil Combine Mode	Sum of Squares
Slice group 1		AutoAlign	Head > Brain
Slices	66	Auto Coil Select	Default
Dist. factor	0 %		
Position	L0.0 P12.0 H13.0	Shim mode	Advanced
Orientation	T > C-20.0	Adjust with body coil	Off
Phase enc. dir.	A >> P	Confirm freq. adjustment	Off
Rotation	0.00 deg	Assume Silicone	Off
Phase oversampling	0 %	? Ref. amplitude 1H	0.000 V
FoV read	210 mm	Adjustment Tolerance	Auto
FoV phase	100.0 %	Adjust volume	
Slice thickness	2.10 mm	! Position	L0.7 P13.2 H9.5
TR	7000 ms	! Orientation	T > C-15.6 > S0.3
		! Rotation	0.00 deg
TE	71.2 ms	! R >> L	130 mm
Averages	1	! A >> P	170 mm
Multi-band accel. factor	2	!F>> H	120 mm
Filter	None	.1 >> 11	120 111111
Coil elements	A32	Physio	
Contrast		1st Signal/Mode	None
MTC	Off	Diff	
Magn. preparation	None	Diffusion mode	Free
Flip angle	90 deg		1
Refocus flip angle	180 deg	Diff. weightings	
Fat suppr.	None	b-value	2000 s/mm²
Grad. rev. fat suppr.	Disabled	Diff. weighted images	On O"
	Disabled	Trace weighted images	Off
Averaging mode	Long term	Average ADC maps	Off
Reconstruction	Magnitude	Individual ADC maps	Off
Measurements	1	FA maps	Off
Delay in TR	0 ms	Mosaic	On
Multiple series	Off	Tensor	Off
•		Noise level	40
Resolution		Diff. directions	72
Base resolution	200	[
Phase resolution	100 %	Sequence	
Phase partial Fourier	6/8	Introduction	Off
Interpolation	Off	Bandwidth	1388 Hz/Px
DAT mode	CDADDA	Free echo spacing	Off
PAT mode	GRAPPA	Echo spacing	0.82 ms
Accel. factor PE	3		
Ref. lines PE	66	SIR accel. factor	1
Reference scan mode	GRE	EPI factor	200
Distortion Corr.	Off	Gradient mode	Normal
Prescan Normalize	Off	RF spoiling	Off
Raw filter	On Off	Excite pulse duration	5120 us
Elliptical filter	Off	Refocus pulse duration	10240 us
Hamming	Off	Slice multiplier	<mark>2</mark>
		Multi-band PE shift	0 1/FoV

MB RF pulse shift	1920 us
zBlip scheme	0
MB kernel size	0
MB knockout band	0
RF pulse shape	1
EPI noise scans	0
EPI full reference scan	0
Diffusion Scheme	Monopolai

Single-band images On MB LeakBlock kernel Off MB RF phase scramble Off Time-shifted MB RF On SENSE1 coil combine On Log physiology to file Off Invert RO/PE polarity On Save reduced raw data On Off Readout slice trace Off Disable ramp sampling User defined diff. delta Off Online Online multi-band recon. FFT scale factor 1.00 Diff. spoil factor 3.0 12.0 deg GRE iPAT ref. FA Send B1 shim trigger Never

\\USER\HCP\HCP_Phase2_7T_autoAlign\Session 3 (diff_7T)\DWI_AP_SSref

USER: hcp_v2_mbep2d_diff

Voxel size: 1.1×1.1×2.1 mm Rel. SNR: 1.00

TA: 0:42

Properties	Off	Multi-slice mode Series	Interleaved Interleaved
Prio Recon Before measurement	Off	Special act	None
After measurement		Special sat.	
Load to viewer	On	Table position	Н
Inline movie	Off	Table position	0 mm
Auto store images	On	Inline Composing	Off
Load to stamp segments	Off	System	
Load images to graphic	Off	System	0"
	Oli	V32	Off
segments	Off	A32	On
Auto open inline display		Positioning mode	FIX
Start measurement without	On	MSMA	S - C - T
further preparation Wait for user to start	Off	Sagittal	R >> L
		Coronal	A >> P
Start measurements	single	Transversal	F >> H
Routine		Coil Combine Mode	Sum of Squares
Slice group 1		AutoAlign	Head > Brain
Slices	<mark>66</mark>	Auto Coil Select	Default
Dist. factor	0 %		
Position	L0.0 P12.0 H13.0	Shim mode	Advanced
Orientation	T > C-20.0	Adjust with body coil	Off
Phase enc. dir.	A >> P	Confirm freq. adjustment	Off
Rotation	0.00 deg	Assume Silicone	Off
Phase oversampling	0 %	? Ref. amplitude 1H	0.000 V
FoV read	210 mm	Adjustment Tolerance	Auto
FoV phase	100.0 %	Adjust volume	
Slice thickness	2.10 mm	! Position	L0.7 P13.2 H9.5
TR	7000 ms	! Orientation	T > C-15.6 > S0.3
TE	71.2 ms	! Rotation	0.00 deg
Averages	1	! R >> L	130 mm
Multi-band accel. factor	2	! A >> P	170 mm
Filter	None	! F >> H	120 mm
Coil elements	A32	l Bl. :	
Con elements	A32	Physio	
Contrast		1st Signal/Mode	None
MTC	Off	Diff	
Magn. preparation	None	Diffusion mode	Free
Flip angle	90 deg	Diff. weightings	1
Refocus flip angle	180 deg	b-value	0 s/mm²
Fat suppr.	None	Diff. weighted images	On
Grad. rev. fat suppr.	Disabled	Trace weighted images	Off
		Average ADC maps	Off
Averaging mode	Long term	Individual ADC maps	Off
Reconstruction	Magnitude	FA maps	Off
Measurements	1	Mosaic	On
Delay in TR	0 ms	Tensor	Off
Multiple series	Off	Noise level	40
Resolution		Diff. directions	6
Base resolution	200	Dill. dilections	
Phase resolution	100 %	Soguence	
Phase partial Fourier	6/8	Sequence	O#
Interpolation	Off	Introduction	Off
	·····	Bandwidth	1388 Hz/Px
PAT mode	GRAPPA	Free echo spacing	Off
Accel. factor PE	3	Echo spacing	0.82 ms
Ref. lines PE	39	SIR accel. factor	1
Reference scan mode	Single-shot	EPI factor	200
		Gradient mode	Normal
Distortion Corr.	Off	RF spoiling	Off
Prescan Normalize	Off	iti apolling	OII
Raw filter	On	Excite pulse duration	5120 us
Elliptical filter	Off	Refocus pulse duration	10240 us
Hamming	Off	Slice multiplier	<mark>2</mark>)

MB RF pulse shift	1920 us
zBlip scheme	2
MB kernel size	0
MB knockout band	0
RF pulse shape	1
EPI noise scans	0
EPI full reference scan	0
Diffusion Scheme	Monopolar
Single-band images	On
MB LeakBlock kernel	Off
MB RF phase scramble	Off
Time-shifted MB RF	On
SENSE1 coil combine	On
Log physiology to file	Off
Invert RO/PE polarity	Off
Save reduced raw data	On
Readout slice trace	Off
Disable ramp sampling	Off
User defined diff. delta	Off
Online multi-band recon.	Online
FFT scale factor	1.00
Diff. spoil factor	3.0
Send B1 shim trigger	Never

\\USER\HCP\HCP_Phase2_7T_autoAlign\Session 3 (diff_7T)\DWI_PA_SSref

TA: 0:42 PAT: 3	Voxel size: 1.1×1.1×2.1 mm	` ,	hcp_v2_mbep2d_diff
Properties	04	Multi-slice mode Series	Interleaved Interleaved
Prio Recon Before measurement	Off	Special sat.	None
After measurement			
Load to viewer	On	Table position	H
Inline movie	Off	Table position	0 mm
Auto store images	On	Inline Composing	Off
Load to stamp segments	Off	System	
Load images to graphic	Off	V32	Off
segments		A32	On
Auto open inline display	Off	Desitioning mode	FIX
Start measurement without	On	Positioning mode MSMA	S - C - T
further preparation		Sagittal	R >> L
Wait for user to start	Off	Coronal	A >> P
Start measurements	single	Transversal	F >> H
Routine		Coil Combine Mode	Sum of Squares
Slice group 1		AutoAlign	Head > Brain
Slices	66	Auto Coil Select	Default
Dist. factor	0 %	Chim modo	Advanced
Position	L0.0 P12.0 H13.0	Shim mode Adjust with body coil	Advanced Off
Orientation	T > C-20.0	Confirm freq. adjustment	Off
Phase enc. dir.	A >> P	Assume Silicone	Off
Rotation	0.00 deg	? Ref. amplitude 1H	0.000 V
Phase oversampling	0 %	Adjustment Tolerance	Auto
FoV read	210 mm	Adjust volume	71010
FoV phase	100.0 %	! Position	L0.7 P13.2 H9.5
Slice thickness TR	2.10 mm 7000 ms	! Orientation	T > C-15.6 > S0.3
TE	71.2 ms	! Rotation	0.00 deg
Averages	1	! R >> L	130 mm
Multi-band accel. factor	2	! A >> P	170 mm
Filter	None	! F >> H	120 mm
Coil elements	A32	Physio	
Contract		1st Signal/Mode	None
Contrast	Off	1	
Magn. preparation	None	Diff	
Flip angle	90 deg	Diffusion mode	Free
Refocus flip angle	180 deg	Diff. weightings	1
Fat suppr.	None	b-value Diff. weighted images	0 s/mm² On
Grad. rev. fat suppr.	Disabled	Trace weighted images	Off
		Average ADC maps	Off
Averaging mode	Long term	Individual ADC maps	Off
Reconstruction	Magnitude	FA maps	Off
Measurements	1	Mosaic	On
Delay in TR Multiple series	0 ms Off	Tensor	Off
1	Oli	Noise level	40
Resolution		Diff. directions	6
Base resolution	200		
Phase resolution	100 %	Sequence	
Phase partial Fourier	6/8	Introduction	Off
Interpolation	Off	Bandwidth	1388 Hz/Px
PAT mode	GRAPPA	Free echo spacing	Off
Accel. factor PE	3	Echo spacing	0.82 ms
Ref. lines PE	39	SIR accel. factor	1
Reference scan mode	Single-shot	EPI factor	200
Distortion Corr.	Off	Gradient mode	Normal
Prescan Normalize	Off	RF spoiling	Off
Raw filter	On	Excite pulse duration	5120 us
Elliptical filter	Off	Refocus pulse duration	10240 us
Hamming	Off	Slice multiplier	2
Geometry		Multi-band PE shift	0 1/FoV
Comeny		1	

MB RF pulse shift	1920 us
zBlip scheme	2
MB kernel size	0
MB knockout band	0
RF pulse shape	1
EPI noise scans	0
EPI full reference scan	0
Diffusion Scheme	Monopola

Single-band images On MB LeakBlock kernel Off MB RF phase scramble Off Time-shifted MB RF On SENSE1 coil combine On Log physiology to file Off Invert RO/PE polarity On Save reduced raw data On Off Readout slice trace Off Disable ramp sampling User defined diff. delta Off Online Online multi-band recon. FFT scale factor 1.00 Diff. spoil factor 3.0 Send B1 shim trigger Never

 $\verb|\USER\HCP\HCP_Phase2_7T_autoAlign\Session 3 (diff_7T)\DWI_AP_SEGref| \\$

USER: hcp_v2_mbep2d_diff

Voxel size: 1.1x1.1x2.1 mm Rel. SNR: 1.00

TA: 1:10

roperties		Multi-slice mode Series	Interleaved Interleaved
Prio Recon	Off	— Jenes	
Before measurement		Special sat.	None
After measurement		Table position	
Load to viewer	On	Table position	H
Inline movie	Off	Table position	0 mm
Auto store images	On	Inline Composing	Off
Load to stamp segments	Off	System	
Load images to graphic	Off	V32	Off
segments	3 11	A32	On
Auto open inline display	Off	A32	
Start measurement without	On	Positioning mode	FIX
	On	MSMA	S-C-T
further preparation	0"	Sagittal	R >> L
Wait for user to start	Off	Coronal	A >> P
Start measurements	single	Transversal	F >> H
outine		Coil Combine Mode	Sum of Squares
Slice group 1			•
	00	AutoAlign	Head > Brain
Slices	<mark>66</mark>	Auto Coil Select	Default
Dist. factor	0 %	Shim mode	Advanced
Position	L0.0 P12.0 H13.0	Adjust with body coil	Off
Orientation	T > C-20.0	Confirm freq. adjustment	Off
Phase enc. dir.	A >> P	Assume Silicone	Off
Rotation	0.00 deg		
Phase oversampling	0 %	? Ref. amplitude 1H	0.000 V
FoV read	210 mm	Adjustment Tolerance	Auto
FoV phase	100.0 %	Adjust volume	
Slice thickness	2.10 mm	! Position	L0.7 P13.2 H9.5
TR	7000 ms	! Orientation	T > C-15.6 > S0.3
TE	71.2 ms	! Rotation	0.00 deg
Averages	1	! R >> L	130 mm
Multi-band accel. factor	2	! A >> P	170 mm
Filter	None	! F >> H	120 mm
		ı	
Coil elements	A32	Physio	
Contrast		1st Signal/Mode	None
MTC	Off	 Diff	
Magn. preparation	None	Diffusion mode	Free
Flip angle	90 deg	Diff. weightings	1
Refocus flip angle	180 deg		
Fat suppr.	None	b-value	0 s/mm²
Grad. rev. fat suppr.	Disabled	Diff. weighted images	On O"
Grau. 1ev. iai suppr.	Disabled	Trace weighted images	Off
Averaging mode	Long term	Average ADC maps	Off
Reconstruction	Magnitude	Individual ADC maps	Off
Measurements	1	FA maps	Off
Delay in TR	0 ms	Mosaic	On
Multiple series	Off	Tensor	Off
munipie series	Oii	Noise level	40
esolution		Diff. directions	6
Base resolution	200		
Phase resolution	100 %	Sequence	
Phase partial Fourier	6/8		Off
Interpolation	Off	Introduction	
	••••••••••••••••••••••••••••••••••••••	Bandwidth	1388 Hz/Px
PAT mode	GRAPPA	Free echo spacing	Off
Accel. factor PE	3	Echo spacing	0.82 ms
Ref. lines PE	120	SIR accel. factor	1
Reference scan mode	Segmented		-
		EPI factor	200
Distortion Corr.	Off	Gradient mode	Normal
Prescan Normalize	Off	RF spoiling	Off
Raw filter	On	Evoite pulse duration	5120 us
Elliptical filter	Off	Excite pulse duration	
Hamming	Off	Refocus pulse duration	10240 us
r arming	Jii	Slice multiplier	2
eometry		Multi-band PE shift	0 1/FoV

MB RF pulse shift	1920 us
zBlip scheme	0
MB kernel size	0
MB knockout band	0
RF pulse shape	1
EPI noise scans	0
EPI full reference scan	0
Diffusion Scheme	Monopolar
Single-band images	On
MB LeakBlock kernel	Off
MB RF phase scramble	Off
Time-shifted MB RF	On
SENSE1 coil combine	On
Log physiology to file	Off
Invert RO/PE polarity	Off
Save reduced raw data	On
Readout slice trace	Off
Disable ramp sampling	Off
User defined diff. delta	Off
Online multi-band recon.	Online
FFT scale factor	1.00
Diff. spoil factor	3.0
Send B1 shim trigger	Never

 $\verb|\USER\HCP\HCP_Phase2_7T_autoAlign\Session 3 (diff_7T)\DWI_PA_SEGref| \\$

USER: hcp_v2_mbep2d_diff

Voxel size: 1.1×1.1×2.1 mm Rel. SNR: 1.00

TA: 1:10

		I Navide all	lated and 1
Properties Properties	O#	Multi-slice mode Series	Interleaved Interleaved
Prio Recon	Off	0	NI
Before measurement		Special sat.	None
After measurement	0-	Table position	Н
Load to viewer	On Off	Table position	0 mm
Inline movie	Off	Inline Composing	Off
Auto store images	On		
Load to stamp segments	Off	System	
Load images to graphic	Off	V32	Off
segments		A32	On
Auto open inline display	Off	Positioning mode	FIX
Start measurement without	On	MSMA	S - C - T
further preparation		Sagittal	R >> L
Wait for user to start	Off	Coronal	A >> P
Start measurements	single	Transversal	F >> H
Routine			
		Coil Combine Mode	Sum of Squares
Slice group 1 Slices	66	AutoAlign	Head > Brain
Dist. factor	0 %	Auto Coil Select	Default
Position		Shim mode	Advanced
	L0.0 P12.0 H13.0	Adjust with body coil	Off
Orientation	T > C-20.0	Confirm freq. adjustment	Off
Phase enc. dir.	A >> P	Assume Silicone	Off
Rotation	0.00 deg	? Ref. amplitude 1H	0.000 V
Phase oversampling	0 %	Adjustment Tolerance	Auto
FoV read	210 mm	Adjust volume	71010
FoV phase	100.0 %	! Position	L0.7 P13.2 H9.5
Slice thickness	2.10 mm	! Orientation	T > C-15.6 > S0.3
TR	7000 ms	! Rotation	0.00 deg
TE	71.2 ms	! R >> L	130 mm
Averages	1	! A >> P	170 mm
Multi-band accel. factor	2	!F>> H	120 mm
Filter	None	ı	120 111111
Coil elements	A32	Physio	
Contrast		1st Signal/Mode	None
MTC	Off	Diff	
Magn. preparation	None	Diffusion mode	Free
Flip angle	90 deg	Diff. weightings	1
Refocus flip angle	180 deg	b-value	0 s/mm²
Fat suppr.	None	Diff. weighted images	On
Grad. rev. fat suppr.	Disabled	Trace weighted images	Off
		Average ADC maps	Off
Averaging mode	Long term	Individual ADC maps	Off
Reconstruction	Magnitude	FA maps	Off
Measurements	1	Mosaic	On
Delay in TR	0 ms	Tensor	Off
Multiple series	Off	Noise level	40
Resolution		Diff. directions	6
Base resolution	200		·
Phase resolution	100 %	Sequence	
Phase partial Fourier	6/8	Introduction	Off
Interpolation	Off	Bandwidth	1388 Hz/Px
	CDADDA	Free echo spacing	Off
PAT mode	GRAPPA	Echo spacing	0.82 ms
Accel. factor PE	3		
Ref. lines PE	120	SIR accel. factor	1
Reference scan mode	Segmented	EPI factor	200
Distortion Corr.	Off	Gradient mode	Normal
Prescan Normalize	Off	RF spoiling	Off
Raw filter	On	Excite pulse duration	5120 us
Elliptical filter	Off	Excite pulse duration Refocus pulse duration	5120 us 10240 us
Hamming	Off	Slice multiplier	10240 us 2
•	-	Multi-band PE shift	<mark>∠</mark> 0 1/FoV
Geometry		IVIUILI-DATIU F E STIIIL	U 1/1 UV

MB RF pulse shift	1920 us
zBlip scheme	0
MB kernel size	0
MB knockout band	0
RF pulse shape	1
EPI noise scans	0
EPI full reference scan	0
Diffusion Scheme	Monopolai

ar Single-band images On MB LeakBlock kernel Off MB RF phase scramble Off Time-shifted MB RF On SENSE1 coil combine On Log physiology to file Off Invert RO/PE polarity On On Save reduced raw data Readout slice trace Off Off Disable ramp sampling User defined diff. delta Off Online Online multi-band recon. FFT scale factor 1.00 Diff. spoil factor 3.0

Never

Send B1 shim trigger

\\USER\HCP\HCP_Phase2_7T_autoAlign\Session 3 (diff_7T)\FieldMap_diffusion

Voxel size: 2.1x1.1x2.1 mm Rel. SNR: 1.00

TA: 1:14

Table position

USER: gre_field_mapping

Properties		Table position Inline Composing	0 mm Off
Prio Recon	Off		
Before measurement		System	
After measurement		V32	Off
Load to viewer	Off	A32	On
Inline movie	Off	Positioning mode	FIX
Auto store images	On	Positioning mode	
Load to stamp segments	Off	MSMA	S-C-T
Load images to graphic	Off	Sagittal	R >> L
segments		Coronal	A >> P
Auto open inline display	Off	Transversal	F >> H
Start measurement without	On	Save uncombined	Off
further preparation		Coil Combine Mode	Adaptive Combine
Wait for user to start	Off	AutoAlign	Head > Brain
Start measurements	single	Auto Coil Select	Default
Start measurements	sirigie	Ol: :	A -ll
Routine		Shim mode	Advanced
Slice group 1		Adjust with body coil	Off
Slices	66	Confirm freq. adjustment	Off
Dist. factor	0 %	Assume Silicone	Off
Position	L0.0 P12.0 H13.0	? Ref. amplitude 1H	0.000 V
Orientation	T > C-20.0	Adjustment Tolerance	Auto
Phase enc. dir.	A >> P	Adjust volume	
		! Position	L0.7 P13.2 H9.5
Rotation	0.00 deg	! Orientation	T > C-15.6 > S0.3
Phase oversampling	0 %	! Rotation	0.00 deg
FoV read	210 mm	! R >> L	130 mm
FoV phase	100.0 %	! A >> P	170 mm
Slice thickness	2.1 mm	!F>>H	120 mm
TR	475.0 ms	! Г <i>>></i> П	120 11111
TE 1	4.08 ms	Composing	
TE 2	5.1 ms		
Averages	1	Sequence	
Concatenations	1	Introduction	On
Filter	None	Dimension	2D
Coil elements	A32	Asymmetric echo	Off
Con ciomento	7.02	Contrasts	2
Contrast		Bandwidth	610 Hz/Px
MTC	Off	Flow comp.	Yes
Flip angle	35 deg		
Fat suppr.	None	RF pulse type	Normal
		Gradient mode	Normal*
Averaging mode	Short term	RF spoiling	On
Reconstruction	Magn./Phase		
Measurements	1		
Multiple series	Off		
Resolution			
	200		
Base resolution	200		
Phase resolution	50 %		
Phase partial Fourier	6/8		
Interpolation	Off		
Image Filter	Off		
Distortion Corr.			
	Off Off		
Prescan Normalize	Off		
Normalize	Off		
B1 filter	Off		
Raw filter	Off		
Elliptical filter	Off		
Geometry			
	Interlegued		
Multi-slice mode	Interleaved		
Series	Interleaved		
Special sat.	None		
Table position	 Н		

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\\USER

