\\USER\Feinberglab\Suhyur	ng\GRASE w/ CS for STG\BP	RGRASE 24SL 1.0mm

TA: 6.0 s PAT: Off Voxel size: 1.0×1.0×1.0 mm Rel. SNR: 1.00 USER: BP_GRASE_SH

Prio Recon Def Prior Recon Def Prior Recon Def	Droportion		Orientation	Sagittal
Before measurement Load to viewer	Properties Properties	O#	Special sat.	None
After measurement Load to viewer On Inline movie Or Or Inline movie Or Or Or Or Or Or Or O		Oli	Table position	ш
Load to siewer				
Inline movie		On		
Auto store images			Inline Composing	Oii
Load to stamp segments		-	System	
Load images to graphic segments Auto open inline display Off M2			T1	On
Segments		_	M2	On
Auto open inline display Off W32		Oii	B4	On
Start measurement without further preparation Wait for user to start Off MSMA S - C - T Start measurements single Start measurements Single Sagittat R > L Coronal A > P Transversal F > H Sagittat R > L Coronal A > P Transversal F > H Sagittat R > L Coronal A > P Transversal F > H Save uncombined Off Octor Ordination Octor Octor Ordination Octor		0#	M3	On
further preparation Walt for user to start Start measurements single Sart measurements Off Single measurements Off Sart measurements Off			V32	Off
Wait for user to start Off Start measurements Single Sagittal R >> L		On		
Salit measurements		0"		
Routine			_	
Transversal F>>H Slab group 1 Slab s 1 Dist. factor 0 % Adaptive Combine	Start measurements	single		
Salab group	Routine			
Slabs	Slab group 1			
Dist. factor		1		
Position				Adaptive Combine
Orientation Transversal Auto Coil Select Default Phase enc. dir. R > L Shim mode Standard Rotation 90.00 deg Adjust with body coil Off Slice versampling 0.% Assume Silicone Off Slice sper slab 24 1 Ref. amplitude 1H 220.000 V FoV read 102.0 mm Adjustment Tolerance Adjustment Tolerance FoV phase 35.3 % Adjust volume Adjust volume FoV phase 35.3 % Adjust volume Isocenter FoV phase 35.0 ms Orientation Isocenter TE 50 ms Rotation 90.00 deg Averages 1 A >> P 102 mm Averages 1 R >> L 36 mm Filter None F >> H 24 mm Contrast Physio Sequence Flip angle 160 deg Composing Fat sat. mode Strong Sequence Fat sat. mode Strong Recordering <td< td=""><td>Position</td><td>Isocenter</td><td></td><td></td></td<>	Position	Isocenter		
Phase enc. dir. R > L Shim mode Standard Adjust with body coil Off Slice oversampling 0.% Confirm freq. adjustment Off Assume Silicone Off	Orientation		Auto Coil Select	Default
Rotation			Shim mode	Standard
Phase oversampling 0 % Slice oversampling 0.0 % Slice oversampling 0.0 % Slice per slab 24 FoV read 102.0 mm FoV phase 35.3 % Slice thickness 1.00 mm FoV phase 35.3 % Slice thickness 1.00 mm TR 3000 ms TE 50 ms Averages 1 Concatenations 1 Filter None Coil elements B4;M2,3;T1 Physio Contrast Image: preparation of the proper state of t		• • • • •		
Slice oversampling				_
Silices per slab				
FoV read				
FoV phase				
Silice thickness 1.00 mm				Adio
TR 3000 ms Orientation Transversal TE 50 ms Rotation 90.00 deg Averages 1 A >> P 102 mm Concatenations 1 R >> L 36 mm Filter None F >> H 24 mm Coll elements B4;M2,3;T1 Physio Contrast Degree Physio None Physio Magn. preparation None Composing None Filip angle 160 deg Composing Presidence Fat suppr. Fat sat. Sequence Fat sat. Fat sat. mode Strong Introduction Off Averaging mode Long term Reordering Centric Averaging mode				Isocontor
TE 50 ms Rotation 90.00 deg Averages 1 A >> P 102 mm Concatenations 1 R >> L 36 mm Filter None F >> H 24 mm Coil elements B4;M2,3;T1 Physio Physio Sequence Filt satuppr. Fat sat. Sequence Fat sat mode Strong Introduction Off Averaging mode Long term Reordering Centric Reconstruction Magnitude Reordering Centric Measurements 2 Bandwidth 1140 Hz/Px Pause after meas. 1 0.0 s Echo spacing 1.1 ms Resolution 102 Turbo factor 18 Base resolution 100 % EPI factor 36 RF pulse type Normal Normal Slice partial Fourier 6/8 refocussing type sinc 2560 Interpolation Off ICE program single PAT m				
Averages 1 A >> P 102 mm Concatenations 1 R >> L 36 mm Fitter None F >> H 24 mm Coil elements B4;M2,3;T1 Physio Physio Contrast Test sections Test Signal/Mode None Magn. preparation Flip angle 160 deg Composing Fat suppr. Fat sat. Sequence Fat sat. mode Strong Introduction Off Averaging mode Long term Reordering Centric Averaging mode Long term Reordering Centric Averaging mode Long term Reordering Centric Contrasts 1 Contrasts 1 Reconstruction Magnitude Contrasts 1 Measurements 2 Contrasts 1 Pause after meas. 1 0.0 s Bandwidth 1140 Hz/Px Multiple series Off Echo spacing 1.1 ms Turbo factor 18 <td></td> <td></td> <td></td> <td></td>				
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Filter Coil elements None B4;M2,3;T1 F >> H 24 mm Contrast Physio 1st Signal/Mode None Magn. preparation Flip angle 160 deg Composing Fat suppr. Fat sat. Sequence Fat sat. mode Strong Introduction Off Averaging mode Reconstruction Magnitude Reordering Centric Centric Measurements 2 Bandwidth 1140 Hz/Px Pause after meas. 1 Multiple series Off Echo spacing 1.1 ms Resolution 102 Base resolution 18 EPI factor 36 Resolution 100 % RF pulse type Normal Normal Slice resolution 100 % Gradient mode Fast Slice partial Fourier formation 6/8 refocussing type sinc 2560 Interpolation Off Interpolation Off PAT mode None Maxwell compensation Off Prescan Normalize Rwifter Off ICE program single Revite duration	<u> </u>			
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Contrast			F >> 11	24 111111
Magn. preparation None Flip angle 160 deg Fat suppr. Fat sat. Fat sat. mode Strong Averaging mode Long term Reconstruction Magnitude Measurements 2 Pause after meas. 1 0.0 s Multiple series Off Resolution 100 s Base resolution 100 % Slice resolution 100 % Slice partial Fourier 6/8 Interpolation Off PAT mode None Prescan Normalize Off Reometry Off Series Interleaved Sat. region 1 Thickness Thickness 36 mm Position Isocenter Variable Flip Angle 01 180 Endrich 1140 Hz/Px Echo spacing 1.1 ms Turbo factor 18 Epl factor 36 RF pulse type Normal Fast 90	ı	21,1112,0,11		
Filip angle			1st Signal/Mode	None
Fat suppr. Fat sat. Strong Averaging mode Long term Reconstruction Magnitude Measurements 2 Contrasts 1 Multiple series Off Epi factor 36 Slice resolution 100 % Slice partial Fourier 6/8 Interpolation Off 102 PAT mode None Persoan Normalize Raw filter Off Series Interleaved Strong Strong Interleaved Strong Introduction Off Strong Introduction Off Strong Introduction Off Introduction Introduction Off Introduction Off Introduction Off Introduction Introduction Off Introduction Introduction Introduction Introduct			Composing	
Fat sat. mode	Flip angle	•	Composing	
Fat sat. mode			Sequence	
Reconstruction Magnitude Reconstruction Magnitude Measurements 2 Pause after meas. 1 Multiple series Off Resolution Resolution Resolution Base resolution 100 % Slice resolution 100 % Slice partial Fourier 6/8 Interpolation Off PAT mode None Prescan Normalize Off Raw filter Off Geometry Series Interleaved Sat. region 1 Thickness 36 mm Position Reordering Centric Contrasts 1 Bandwidth 1140 Hz/Px Echo spacing 1.1 ms Turbo factor 18 EPI factor 36 RF pulse type Normal Gradient mode Fast Fast Series Interleaved Reordering Contrasts 1 Bandwidth 1140 Hz/Px Echo spacing 1 Itel Eph spacing 1 Interleaved Recordering Contrasts 1 Bandwidth 1140 Hz/Px Echo spacing 1 Itel Eph spacing 1 Interleaved Recordering Contrasts 1 Bandwidth 1140 Hz/Px Echo spacing 1 Itel Eph spacing 1 Interleaved Recordering Contrasts 1 Interleaved Interleaved Recordering Contrasts 1 Interleaved Interleaved Interleaved Recordering Contrasts 1 Interleaved Interlea	Fat sat. mode	Strong		Off
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Measurements 2 Contrasts 1 Pause after meas. 1 0.0 s Bandwidth 1140 Hz/Px Multiple series Off Echo spacing 1.1 ms Resolution Turbo factor 18 Base resolution 100 EPI factor 36 Phase resolution 100 % RF pulse type Normal Slice partial Fourier 6/8 refocussing type sinc 2560 Interpolation Off phase encoding ON PAT mode None Maxwell compensation Off Prescan Normalize Off ICE program single Raw filter Off ICE program single Geometry excite duration 2560 Series Interleaved excite BWTP 12.0 Sat. region 1 refoc BWTP 8.0 Thickness 36 mm Variable Flip Angle 01 180 Position Isocenter Variable Flip Angle 02 180			Reordering	Centric
Pause after meas. 1 Multiple series0.0 s OffBandwidth Echo spacing1140 Hz/Px Echo spacingResolution102 Phase resolutionTurbo factor 100 % Slice resolution18 EPI factor RF pulse type Gradient modeSlice partial Fourier Interpolation6/8 Fastrefocussing type flip angle excit phase encoding Maxwell compensationsinc 2560 Off InterpolationPAT modeNonephase encoding Maxwell compensationON Maxwell compensationPrescan Normalize Raw filterOff OffICE program prepscans excite duration excite duration excite duration excite BWTP refoc BWTP2560 3840 excite BWTP 12.0Sat. region 1 Thickness Position36 mm InterleavedVariable Flip Angle 01 Variable Flip Angle 02180		•	Contrasts	1
Multiple seriesOffEcho spacing1.1 msResolutionTurbo factor18Base resolution100 %EPI factor36Phase resolution100 %RF pulse typeNormalSlice resolution100 %Gradient modeFastSlice partial Fourier6/8refocussing typesinc 2560InterpolationOffflip angle excit90PAT modeNonephase encodingONPrescan NormalizeOffICE programsingleRaw filterOffICE programsingleGeometrySeriesInterleavedexcite duration2560Sat. region 1refoc duration3840Thickness36 mmVariable Flip Angle 01180PositionIsocenterVariable Flip Angle 02180		-	Bandwidth	1140 Hz/Px
Resolution Base resolution 102 EPI factor 36 RF pulse type Normal Slice resolution 100 % Gradient mode Fast Slice partial Fourier 6/8 Interpolation Off Off			Echo spacing	1.1 ms
Base resolution 102 Phase resolution 100 % Slice partial Fourier 6/8 Interpolation Off Ilip angle excit 90 PAT mode None Maxwell compensation Off Prescan Normalize Off ICE program single prepscans 0 Refoundation Series Interleaved Excite duration 2560 Sat. region 1 Thickness 36 mm Position Isocenter Variable Flip Angle 02 EPI factor 36 RF pulse type Normal RAF pulse type Sinc 2560 Refoundation Fast Normal Prescan Sinc 2560 Interocussing type sinc 2560 Interocussing type sinc 2560 Interocussing type sinc 2560 Ilip angle excit 90 Maxwell compensation Off ICE program single Prescans 0 EXIT experience Sincle Sincl		J.11		10
Phase resolution 100 % Slice resolution 100 % Slice partial Fourier 6/8 Interpolation Off flip angle excit 90 PAT mode None phase encoding ON Prescan Normalize Off ICE program single Raw filter Off prepscans 0 Series Interleaved excit duration 2560 Sat. region 1 Thickness 36 mm Position Isocenter Variable Flip Angle 02 RF pulse type Normal RF pulse type Shormal RF pulse type Normal RF pulse type Normal RF pulse type Normal Fast Repulse type Normal Fast Interleaved Fast Variable Flip Angle 01 Normal RF pulse type Normal Fast Variable Flip Angle 01 Normal RF pulse type Normal Fast Normal RF pulse type Normal Fast Variable Flip Angle 01 Normal RF pulse type Normal Fast Variable Flip Angle 02 Normal Fast Variable Flip Angle 01 Normal Fast Variable Flip Angle 02 Normal Fast Variable Flip Angle 02 Normal Fast Variable Flip Angle 02				
Slice resolution 100 % Slice partial Fourier 6/8 Interpolation Off flip angle excit 90 PAT mode None flip angle excit 90 Prescan Normalize Off ICE program single prepscans 0 Raw filter Off prepscans 0 Series Interleaved excite duration 2560 Set region 1 Thickness 36 mm Variable Flip Angle 01 180 Position Isocenter Variable Flip Angle 02 180				
Slice partial Fourier 6/8 Interpolation Off flip angle excit 90 PAT mode None phase encoding ON Maxwell compensation Off ICE program single prepscans 0 Raw filter Off prepscans 0 Series Interleaved excit 90 Sat. region 1 Fooition Isocenter Variable Flip Angle 02 180				
Interpolation Off flip angle excit 90 PAT mode None phase encoding ON Maxwell compensation Off ICE program single Raw filter Off prepscans 0 Geometry excite duration 2560 Series Interleaved excite BWTP 12.0 Sat. region 1 refoc BWTP 8.0 Thickness 36 mm Variable Flip Angle 01 180 Position Isocenter Variable Flip Angle 02 180		100 %	Gradient mode	rast
Interpolation Off flip angle excit 90 PAT mode None phase encoding ON Maxwell compensation Off Prescan Normalize Off ICE program single Raw filter Off prepscans 0 Geometry excite duration 2560 Series Interleaved excite duration 3840 excite BWTP 12.0 Sat. region 1 refoc BWTP 8.0 Thickness 36 mm Variable Flip Angle 01 180 Position Isocenter Variable Flip Angle 02 180			refocussing type	sinc 2560
PAT mode None phase encoding ON Maxwell compensation Off Prescan Normalize Off ICE program single Raw filter Off prepscans 0 Geometry excite duration 2560 refoc duration 3840 excite BWTP 12.0 Sat. region 1 refoc BWTP 8.0 Thickness 36 mm Variable Flip Angle 01 180 Position Isocenter Variable Flip Angle 02 180	Interpolation	Off		
Maxwell compensation Off Prescan Normalize Off Raw filter Off Geometry Series Interleaved excite BWTP 12.0 Sat. region 1 refoc BWTP 8.0 Thickness 36 mm Variable Flip Angle 01 180 Position Isocenter Variable Flip Angle 02 180	PAT mode	None		ON
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Series Interleaved excite BWTP 12.0 Sat. region 1 refoc BWTP 8.0 Thickness 36 mm Variable Flip Angle 01 180 Position Isocenter Variable Flip Angle 02 180		lutaria esseri		
Sat. region 1 refoc BWTP 8.0 Thickness 36 mm Variable Flip Angle 01 180 Position Isocenter Variable Flip Angle 02 180	Series	interieaved		
Thickness 36 mm Variable Flip Angle 01 180 Position Isocenter Variable Flip Angle 02 180	Sat. region 1			
Position Isocenter Variable Flip Angle 02 180	_	36 mm		
	ı		1/30	

Variable Flip Angle 03	180
Variable Flip Angle 04	180
Variable Flip Angle 05	180
Variable Flip Angle 06	180
Variable Flip Angle 07	180
Variable Flip Angle 08	180
Variable Flip Angle 09	180
Variable Flip Angle 10	180
Variable Flip Angle 11	180
Variable Flip Angle 12	180
Variable Flip Angle 13	180
Variable Flip Angle 14	180
Variable Flip Angle 15	180
Variable Flip Angle 16	180
Variable Flip Angle 17	180
Variable Flip Angle 18	180
Variable Flip Angle 19	180
Variable Flip Angle 20	180
Regular or CS	Regular
actual ETL	6
Which areas?	Visual Cortex

\\USER\Feinb	erglab\Suhy	ung\GRASE w/ CS for STG	BP_AccVGRASE	_CFA_24SL_1.0mm_EPI20	
TA: 1:30	PAT: Off	Voxel size: 1.0×1.0×1.0 mm	Rel. SNR: 1.00	USER: BP_GRASE_SH	

Properties		Pause after meas. 20	0.0 s
Prio Recon	Off	Pause after meas. 21	0.0 s
	Oli	Pause after meas. 22	0.0 s
Before measurement After measurement		Pause after meas. 23	0.0 s
Load to viewer	On	Pause after meas. 24	0.0 s
Inline movie	Off	Pause after meas. 25	0.0 s
		Pause after meas. 26	0.0 s
Auto store images	On Off	Pause after meas. 27	0.0 s
Load to stamp segments	Off	Pause after meas. 28	0.0 s
Load images to graphic	Off	Pause after meas. 29	0.0 s
segments	0"	Pause after meas. 30	0.0 s
Auto open inline display	Off	Pause after meas. 31	0.0 s
Start measurement without	On	Pause after meas, 32	0.0 s
further preparation		Pause after meas. 33	0.0 s
Wait for user to start	Off	Pause after meas. 34	0.0 s
Start measurements	single	Pause after meas. 35	0.0 s
Routine		Pause after meas. 36	0.0 s
		Pause after meas. 37	0.0 s
Slab group 1 Slabs	4	Pause after meas. 38	0.0 s
	1	Pause after meas. 39	0.0 s
Dist. factor	0 %	Pause after meas. 40	0.0 s
Position	Isocenter		
Orientation	Transversal	Pause after meas. 41	0.0 s
Phase enc. dir.	R >> L	Pause after meas. 42	0.0 s
Rotation	90.00 deg	Pause after meas. 43	0.0 s
Phase oversampling	0 %	Pause after meas. 44	0.0 s
Slice oversampling	0.0 %	Pause after meas. 45	0.0 s
Slices per slab	24	Pause after meas. 46	0.0 s
FoV read	102.0 mm	Pause after meas. 47	0.0 s
FoV phase	35.3 %	Pause after meas. 48	0.0 s
Slice thickness	1.00 mm	Pause after meas. 49	0.0 s
TR	1500 ms	Pause after meas. 50	0.0 s
TE	32.08 ms	Pause after meas, 51	0.0 s
Averages	1	Pause after meas. 52	0.0 s
Concatenations	1	Pause after meas, 53	0.0 s
Filter	None	Pause after meas. 54	0.0 s
		Pause after meas. 55	0.0 s
Coil elements	B4;M2,3;T1	Pause after meas. 56	0.0 s
Contrast		Pause after meas. 57	0.0 s
Magn. preparation	None		0.0 s
Flip angle	160 deg	Pause after meas. 58	
Fat suppr.	Fat sat.	Pause after meas. 59	0.0 s
Fat sat. mode	Strong	Multiple series	Off
		Resolution	
Averaging mode	Long term	Base resolution	102
Reconstruction	Magnitude	Phase resolution	100 %
Measurements	60	Slice resolution	100 %
Pause after meas. 1	0.0 s	Slice partial Fourier	Off
Pause after meas. 2	0.0 s	Interpolation	Off
Pause after meas. 3	0.0 s		·····
Pause after meas. 4	0.0 s	PAT mode	None
Pause after meas. 5	0.0 s	Dragger News - !!	O#
Pause after meas. 6	0.0 s	Prescan Normalize	Off
Pause after meas. 7	0.0 s	Raw filter	Off
Pause after meas. 8	0.0 s	Geometry	
	0.0 8		
Pause after meas 9			Interleaved
Pause after meas. 9 Pause after meas. 10	0.0 s	Series	Interleaved
Pause after meas. 10	0.0 s 0.0 s		Interleaved
Pause after meas. 10 Pause after meas. 11	0.0 s 0.0 s 0.0 s	Series	Interleaved 36 mm
Pause after meas. 10 Pause after meas. 11 Pause after meas. 12	0.0 s 0.0 s 0.0 s 0.0 s	Series Sat. region 1	
Pause after meas. 10 Pause after meas. 11 Pause after meas. 12 Pause after meas. 13	0.0 s 0.0 s 0.0 s 0.0 s 0.0 s	Series Sat. region 1 Thickness	36 mm Isocenter
Pause after meas. 10 Pause after meas. 11 Pause after meas. 12 Pause after meas. 13 Pause after meas. 14	0.0 s 0.0 s 0.0 s 0.0 s 0.0 s	Series Sat. region 1 Thickness Position Orientation	36 mm
Pause after meas. 10 Pause after meas. 11 Pause after meas. 12 Pause after meas. 13 Pause after meas. 14 Pause after meas. 15	0.0 s 0.0 s 0.0 s 0.0 s 0.0 s 0.0 s	Series Sat. region 1 Thickness Position Orientation Special sat.	36 mm Isocenter Sagittal None
Pause after meas. 10 Pause after meas. 11 Pause after meas. 12 Pause after meas. 13 Pause after meas. 14 Pause after meas. 15 Pause after meas. 16	0.0 s 0.0 s 0.0 s 0.0 s 0.0 s 0.0 s 0.0 s 0.0 s	Series Sat. region 1 Thickness Position Orientation Special sat. Table position	36 mm Isocenter Sagittal None
Pause after meas. 10 Pause after meas. 11 Pause after meas. 12 Pause after meas. 13 Pause after meas. 14 Pause after meas. 15 Pause after meas. 16 Pause after meas. 17	0.0 s 0.0 s 0.0 s 0.0 s 0.0 s 0.0 s 0.0 s 0.0 s 0.0 s	Series Sat. region 1 Thickness Position Orientation Special sat. Table position Table position	36 mm Isocenter Sagittal None H 0 mm
Pause after meas. 10 Pause after meas. 11 Pause after meas. 12 Pause after meas. 13 Pause after meas. 14 Pause after meas. 15 Pause after meas. 16 Pause after meas. 17 Pause after meas. 18	0.0 s 0.0 s 0.0 s 0.0 s 0.0 s 0.0 s 0.0 s 0.0 s 0.0 s 0.0 s	Series Sat. region 1 Thickness Position Orientation Special sat. Table position	36 mm Isocenter Sagittal None
Pause after meas. 10 Pause after meas. 11 Pause after meas. 12 Pause after meas. 13 Pause after meas. 14 Pause after meas. 15 Pause after meas. 16 Pause after meas. 17	0.0 s 0.0 s 0.0 s 0.0 s 0.0 s 0.0 s 0.0 s 0.0 s 0.0 s	Series Sat. region 1 Thickness Position Orientation Special sat. Table position Table position	36 mm Isocenter Sagittal None H 0 mm

System	
T1	On
M2	On
B4	On
M3	On
V32	Off
Positioning mode	REF
MSMA	S - C - T
Sagittal	R >> L
Coronal	A >> P
Transversal	F >> H
Save uncombined	Off
Coil Combine Mode	Adaptive Combine
AutoAlign	
Auto Coil Select	Default
Shim mode	Standard
Adjust with body coil	Off
Confirm freq. adjustment	Off
Assume Silicone	Off
! Ref. amplitude 1H	220.000 V
Adjustment Tolerance	Auto
Adjust volume	
Position	Isocenter
Orientation	Transversal
Rotation	90.00 deg
A >> P	102 mm
R >> L	36 mm
F >> H	24 mm
Physio	
1st Signal/Mode	None
Composing	
Sequence	
	Off
Sequence	Off 3D
Sequence Introduction	
Sequence Introduction Dimension Reordering Contrasts	3D Centric 1
Sequence Introduction Dimension Reordering Contrasts Bandwidth	3D Centric 1 1140 Hz/Px
Sequence Introduction Dimension Reordering Contrasts	3D Centric 1
Sequence Introduction Dimension Reordering Contrasts Bandwidth	3D Centric 1 1140 Hz/Px
Sequence Introduction Dimension Reordering Contrasts Bandwidth Echo spacing	3D Centric 1 1140 Hz/Px 1.1 ms
Sequence Introduction Dimension Reordering Contrasts Bandwidth Echo spacing Turbo factor	3D Centric 1 1140 Hz/Px 1.1 ms
Sequence Introduction Dimension Reordering Contrasts Bandwidth Echo spacing Turbo factor EPI factor	3D Centric 1 1140 Hz/Px 1.1 ms
Sequence Introduction Dimension Reordering Contrasts Bandwidth Echo spacing Turbo factor EPI factor RF pulse type Gradient mode	3D Centric 1 1140 Hz/Px 1.1 ms 24 20 Normal
Sequence Introduction Dimension Reordering Contrasts Bandwidth Echo spacing Turbo factor EPI factor RF pulse type	3D Centric 1 1140 Hz/Px 1.1 ms 24 20 Normal Fast
Sequence Introduction Dimension Reordering Contrasts Bandwidth Echo spacing Turbo factor EPI factor RF pulse type Gradient mode refocussing type	3D Centric 1 1140 Hz/Px 1.1 ms 24 20 Normal Fast sinc 2560
Sequence Introduction Dimension Reordering Contrasts Bandwidth Echo spacing Turbo factor EPI factor RF pulse type Gradient mode refocussing type flip angle excit	3D Centric 1 1140 Hz/Px 1.1 ms 24 20 Normal Fast sinc 2560 90
Sequence Introduction Dimension Reordering Contrasts Bandwidth Echo spacing Turbo factor EPI factor RF pulse type Gradient mode refocussing type flip angle excit phase encoding	3D Centric 1 1140 Hz/Px 1.1 ms 24 20 Normal Fast sinc 2560 90 ON
Sequence Introduction Dimension Reordering Contrasts Bandwidth Echo spacing Turbo factor EPI factor RF pulse type Gradient mode refocussing type flip angle excit phase encoding Maxwell compensation	3D Centric 1 1140 Hz/Px 1.1 ms 24 20 Normal Fast sinc 2560 90 ON Off
Sequence Introduction Dimension Reordering Contrasts Bandwidth Echo spacing Turbo factor EPI factor RF pulse type Gradient mode refocussing type flip angle excit phase encoding Maxwell compensation ICE program prepscans excite duration	3D Centric 1 1140 Hz/Px 1.1 ms 24 20 Normal Fast sinc 2560 90 ON Off single
Sequence Introduction Dimension Reordering Contrasts Bandwidth Echo spacing Turbo factor EPI factor RF pulse type Gradient mode refocussing type flip angle excit phase encoding Maxwell compensation ICE program prepscans excite duration refoc duration	3D Centric 1 1140 Hz/Px 1.1 ms 24 20 Normal Fast sinc 2560 90 ON Off single 0 2560 3840
Sequence Introduction Dimension Reordering Contrasts Bandwidth Echo spacing Turbo factor EPI factor RF pulse type Gradient mode refocussing type flip angle excit phase encoding Maxwell compensation ICE program prepscans excite duration refoc duration excite BWTP	3D Centric 1 1140 Hz/Px 1.1 ms 24 20 Normal Fast sinc 2560 90 ON Off single 0 2560 3840 12.0
Sequence Introduction Dimension Reordering Contrasts Bandwidth Echo spacing Turbo factor EPI factor RF pulse type Gradient mode refocussing type flip angle excit phase encoding Maxwell compensation ICE program prepscans excite duration refoc duration excite BWTP refoc BWTP	3D Centric 1 1140 Hz/Px 1.1 ms 24 20 Normal Fast sinc 2560 90 ON Off single 0 2560 3840 12.0 8.0
Sequence Introduction Dimension Reordering Contrasts Bandwidth Echo spacing Turbo factor EPI factor RF pulse type Gradient mode refocussing type flip angle excit phase encoding Maxwell compensation ICE program prepscans excite duration refoc duration excite BWTP refoc BWTP Variable Flip Angle 01	3D Centric 1 1140 Hz/Px 1.1 ms 24 20 Normal Fast sinc 2560 90 ON Off single 0 2560 3840 12.0 8.0 180
Sequence Introduction Dimension Reordering Contrasts Bandwidth Echo spacing Turbo factor EPI factor RF pulse type Gradient mode refocussing type flip angle excit phase encoding Maxwell compensation ICE program prepscans excite duration refoc duration excite BWTP refoc BWTP Variable Flip Angle 01 Variable Flip Angle 02	3D Centric 1 1140 Hz/Px 1.1 ms 24 20 Normal Fast sinc 2560 90 ON Off single 0 2560 3840 12.0 8.0 180 180
Sequence Introduction Dimension Reordering Contrasts Bandwidth Echo spacing Turbo factor EPI factor RF pulse type Gradient mode refocussing type flip angle excit phase encoding Maxwell compensation ICE program prepscans excite duration refoc duration excite BWTP refoc BWTP Variable Flip Angle 01 Variable Flip Angle 02 Variable Flip Angle 03	3D Centric 1 1140 Hz/Px 1.1 ms 24 20 Normal Fast sinc 2560 90 ON Off single 0 2560 3840 12.0 8.0 180 180
Sequence Introduction Dimension Reordering Contrasts Bandwidth Echo spacing Turbo factor EPI factor RF pulse type Gradient mode refocussing type flip angle excit phase encoding Maxwell compensation ICE program prepscans excite duration refoc duration excite BWTP refoc BWTP Variable Flip Angle 01 Variable Flip Angle 03 Variable Flip Angle 03 Variable Flip Angle 04	3D Centric 1 1140 Hz/Px 1.1 ms 24 20 Normal Fast sinc 2560 90 ON Off single 0 2560 3840 12.0 8.0 180 180 180 180
Sequence Introduction Dimension Reordering Contrasts Bandwidth Echo spacing Turbo factor EPI factor RF pulse type Gradient mode refocussing type flip angle excit phase encoding Maxwell compensation ICE program prepscans excite duration refoc duration excite BWTP refoc BWTP Variable Flip Angle 01 Variable Flip Angle 03 Variable Flip Angle 04 Variable Flip Angle 05	3D Centric 1 1140 Hz/Px 1.1 ms 24 20 Normal Fast sinc 2560 90 ON Off single 0 2560 3840 12.0 8.0 180 180 180 180 180
Sequence Introduction Dimension Reordering Contrasts Bandwidth Echo spacing Turbo factor EPI factor RF pulse type Gradient mode refocussing type flip angle excit phase encoding Maxwell compensation ICE program prepscans excite duration refoc duration excite BWTP refoc BWTP Variable Flip Angle 01 Variable Flip Angle 03 Variable Flip Angle 04 Variable Flip Angle 05 Variable Flip Angle 05 Variable Flip Angle 06	3D Centric 1 1140 Hz/Px 1.1 ms 24 20 Normal Fast sinc 2560 90 ON Off single 0 2560 3840 12.0 8.0 180 180 180 180 180 180
Sequence Introduction Dimension Reordering Contrasts Bandwidth Echo spacing Turbo factor EPI factor RF pulse type Gradient mode refocussing type flip angle excit phase encoding Maxwell compensation ICE program prepscans excite duration refoc duration excite BWTP Variable Flip Angle 01 Variable Flip Angle 02 Variable Flip Angle 03 Variable Flip Angle 04 Variable Flip Angle 05 Variable Flip Angle 06 Variable Flip Angle 06 Variable Flip Angle 07	3D Centric 1 1140 Hz/Px 1.1 ms 24 20 Normal Fast sinc 2560 90 ON Off single 0 2560 3840 12.0 8.0 180 180 180 180 180 180 180 180 180
Sequence Introduction Dimension Reordering Contrasts Bandwidth Echo spacing Turbo factor EPI factor RF pulse type Gradient mode refocussing type flip angle excit phase encoding Maxwell compensation ICE program prepscans excite duration refoc duration excite BWTP refoc BWTP Variable Flip Angle 01 Variable Flip Angle 02 Variable Flip Angle 03 Variable Flip Angle 04 Variable Flip Angle 05 Variable Flip Angle 06 Variable Flip Angle 07 Variable Flip Angle 07 Variable Flip Angle 07 Variable Flip Angle 07 Variable Flip Angle 08	3D Centric 1 1140 Hz/Px 1.1 ms 24 20 Normal Fast sinc 2560 90 ON Off single 0 2560 3840 12.0 8.0 180 180 180 180 180 180 180 180 180 18
Sequence Introduction Dimension Reordering Contrasts Bandwidth Echo spacing Turbo factor EPI factor RF pulse type Gradient mode refocussing type flip angle excit phase encoding Maxwell compensation ICE program prepscans excite duration refoc duration excite BWTP Variable Flip Angle 01 Variable Flip Angle 02 Variable Flip Angle 03 Variable Flip Angle 04 Variable Flip Angle 05 Variable Flip Angle 06 Variable Flip Angle 07 Variable Flip Angle 07 Variable Flip Angle 08 Variable Flip Angle 08 Variable Flip Angle 08 Variable Flip Angle 09	3D Centric 1 1140 Hz/Px 1.1 ms 24 20 Normal Fast sinc 2560 90 ON Off single 0 2560 3840 12.0 8.0 180 180 180 180 180 180 180 180 180 18
Sequence Introduction Dimension Reordering Contrasts Bandwidth Echo spacing Turbo factor EPI factor RF pulse type Gradient mode refocussing type flip angle excit phase encoding Maxwell compensation ICE program prepscans excite duration refoc duration excite BWTP refoc BWTP Variable Flip Angle 01 Variable Flip Angle 02 Variable Flip Angle 03 Variable Flip Angle 04 Variable Flip Angle 05 Variable Flip Angle 06 Variable Flip Angle 07 Variable Flip Angle 07 Variable Flip Angle 07 Variable Flip Angle 07 Variable Flip Angle 08	3D Centric 1 1140 Hz/Px 1.1 ms 24 20 Normal Fast sinc 2560 90 ON Off single 0 2560 3840 12.0 8.0 180 180 180 180 180 180 180 180 180 18

Variable Flip Angle 12	180	
Variable Flip Angle 13	180	
Variable Flip Angle 14	180	
Variable Flip Angle 15	180	
Variable Flip Angle 16	180	
Variable Flip Angle 17	180	
Variable Flip Angle 18	180	
Variable Flip Angle 19	180	
Variable Flip Angle 20	180	
Regular or CS	CS	
actual ETL	8	
Which areas?	Visual Cortex	

\\USER\Feinb	erglab\Suhy	γ ung\GRASE w/ CS for STG	\BP_AccVGRASE	E_CFA_24SL_1.0mm_EPI16	
TA: 1:30	PAT: Off	Voxel size: 1.0×1.0×1.0 mm	Rel. SNR: 1.00	USER: BP_GRASE_SH	

se after meas. 44 se after meas. 45 se after meas. 46 se after meas. 47 se after meas. 48 se after meas. 49 se after meas. 50 se after meas. 51 se after meas. 52 se after meas. 53 se after meas. 54 se after meas. 55 se after meas. 56 se after meas. 57 se after meas. 57 se after meas. 58 se after meas. 59 siple series tion e resolution e partial Fourier polation mode scan Normalize filter stry es region 1 ickness sition ientation cial sat. e position e composing	0.0 s
se after meas. 45 se after meas. 46 se after meas. 47 se after meas. 48 se after meas. 49 se after meas. 50 se after meas. 51 se after meas. 52 se after meas. 53 se after meas. 54 se after meas. 55 se after meas. 56 se after meas. 57 se after meas. 58 se after meas. 59 sple series tion e resolution e resolution e partial Fourier polation mode can Normalize filter stry es region 1 ickness sition ientation cial sat.	0.0 s 0.0 f Interleaved 36 mm Isocenter Sagittal None H 0 mm
se after meas. 45 se after meas. 46 se after meas. 47 se after meas. 48 se after meas. 49 se after meas. 50 se after meas. 51 se after meas. 52 se after meas. 53 se after meas. 54 se after meas. 55 se after meas. 56 se after meas. 56 se after meas. 57 se after meas. 59 sple series tion e resolution e resolution e resolution e partial Fourier polation mode can Normalize filter stry es region 1 ickness sition ientation cial sat.	0.0 s 0.0 f Interleaved 36 mm Isocenter Sagittal None
se after meas. 45 se after meas. 46 se after meas. 47 se after meas. 48 se after meas. 49 se after meas. 50 se after meas. 51 se after meas. 52 se after meas. 53 se after meas. 54 se after meas. 55 se after meas. 56 se after meas. 57 se after meas. 58 se after meas. 59 siple series tion e resolution e resolution e partial Fourier polation mode can Normalize filter stry es region 1 ickness sition ientation	0.0 s
se after meas. 45 se after meas. 46 se after meas. 47 se after meas. 48 se after meas. 49 se after meas. 50 se after meas. 51 se after meas. 52 se after meas. 53 se after meas. 54 se after meas. 55 se after meas. 56 se after meas. 57 se after meas. 58 se after meas. 59 siple series tion e resolution e resolution e partial Fourier polation mode can Normalize filter stry es region 1 ickness sition ientation	0.0 s
se after meas. 45 se after meas. 46 se after meas. 47 se after meas. 48 se after meas. 49 se after meas. 50 se after meas. 51 se after meas. 52 se after meas. 53 se after meas. 54 se after meas. 55 se after meas. 56 se after meas. 57 se after meas. 58 se after meas. 59 se after meas. 50 se after mea	0.0 s
se after meas. 45 se after meas. 46 se after meas. 47 se after meas. 48 se after meas. 49 se after meas. 50 se after meas. 51 se after meas. 52 se after meas. 53 se after meas. 54 se after meas. 55 se after meas. 56 se after meas. 57 se after meas. 58 se after meas. 59 siple series tion e resolution e partial Fourier polation mode can Normalize filter etry es region 1 ickness	0.0 s
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se after meas. 45 se after meas. 46 se after meas. 47 se after meas. 48 se after meas. 49 se after meas. 50 se after meas. 51 se after meas. 52 se after meas. 53 se after meas. 54 se after meas. 55 se after meas. 56 se after meas. 57 se after meas. 57 se after meas. 58 se after meas. 59 siple series tion e resolution e partial Fourier polation mode can Normalize filter etry	0.0 s
se after meas. 45 se after meas. 46 se after meas. 47 se after meas. 48 se after meas. 49 se after meas. 50 se after meas. 51 se after meas. 52 se after meas. 53 se after meas. 54 se after meas. 55 se after meas. 56 se after meas. 57 se after meas. 58 se after meas. 59 se after meas. 50 se after mea	0.0 s
se after meas. 45 se after meas. 46 se after meas. 47 se after meas. 48 se after meas. 49 se after meas. 50 se after meas. 51 se after meas. 52 se after meas. 53 se after meas. 54 se after meas. 55 se after meas. 56 se after meas. 57 se after meas. 58 se after meas. 59 se after meas. 50 se after mea	0.0 s
se after meas. 45 se after meas. 46 se after meas. 47 se after meas. 48 se after meas. 49 se after meas. 50 se after meas. 51 se after meas. 52 se after meas. 53 se after meas. 54 se after meas. 55 se after meas. 56 se after meas. 56 se after meas. 57 se after meas. 58 se after meas. 59 sple series tion e resolution e resolution e partial Fourier polation mode can Normalize	0.0 s
se after meas. 45 se after meas. 46 se after meas. 47 se after meas. 48 se after meas. 49 se after meas. 50 se after meas. 51 se after meas. 52 se after meas. 53 se after meas. 54 se after meas. 55 se after meas. 56 se after meas. 57 se after meas. 57 se after meas. 58 se after meas. 59 sple series tion e resolution se resolution e partial Fourier polation mode	0.0 s 0.0 s 0.
se after meas. 45 se after meas. 46 se after meas. 47 se after meas. 48 se after meas. 49 se after meas. 50 se after meas. 51 se after meas. 52 se after meas. 53 se after meas. 54 se after meas. 55 se after meas. 56 se after meas. 57 se after meas. 58 se after meas. 59 spe after	0.0 s 0.0 s 0.
se after meas. 45 se after meas. 46 se after meas. 47 se after meas. 48 se after meas. 49 se after meas. 50 se after meas. 51 se after meas. 52 se after meas. 53 se after meas. 54 se after meas. 55 se after meas. 56 se after meas. 57 se after meas. 58 se after meas. 59 spe after	0.0 s 0.0 s 0.
se after meas. 45 se after meas. 46 se after meas. 47 se after meas. 48 se after meas. 49 se after meas. 50 se after meas. 51 se after meas. 52 se after meas. 53 se after meas. 54 se after meas. 55 se after meas. 56 se after meas. 56 se after meas. 57 se after meas. 58 se after meas. 59 se after meas. 50 se after mea	0.0 s 0.0 s 0.
se after meas. 45 se after meas. 46 se after meas. 47 se after meas. 48 se after meas. 49 se after meas. 50 se after meas. 51 se after meas. 52 se after meas. 53 se after meas. 54 se after meas. 55 se after meas. 56 se after meas. 57 se after meas. 57 se after meas. 59	0.0 s 0.0 s
se after meas. 45 se after meas. 46 se after meas. 47 se after meas. 48 se after meas. 49 se after meas. 50 se after meas. 51 se after meas. 52 se after meas. 53 se after meas. 54 se after meas. 55 se after meas. 56 se after meas. 57 se after meas. 57 se after meas. 58 se after meas. 59	0.0 s 0.0 s
se after meas. 45 se after meas. 46 se after meas. 47 se after meas. 48 se after meas. 49 se after meas. 50 se after meas. 51 se after meas. 52 se after meas. 53 se after meas. 54 se after meas. 55 se after meas. 56 se after meas. 57 se after meas. 57 se after meas. 58 se after meas. 59	0.0 s 0.0 s
se after meas. 45 se after meas. 46 se after meas. 47 se after meas. 48 se after meas. 49 se after meas. 50 se after meas. 51 se after meas. 52 se after meas. 53 se after meas. 54 se after meas. 55 se after meas. 56 se after meas. 57 se after meas. 57 se after meas. 58 se after meas. 59	0.0 s 0.0 s
se after meas. 45 se after meas. 46 se after meas. 47 se after meas. 48 se after meas. 49 se after meas. 50 se after meas. 51 se after meas. 52 se after meas. 53 se after meas. 54 se after meas. 55 se after meas. 55 se after meas. 56 se after meas. 57 se after meas. 57 se after meas. 58 se after meas. 59	0.0 s 0.0 s
se after meas. 45 se after meas. 46 se after meas. 47 se after meas. 48 se after meas. 49 se after meas. 50 se after meas. 51 se after meas. 52 se after meas. 53 se after meas. 54 se after meas. 55 se after meas. 55 se after meas. 56 se after meas. 57 se after meas. 57 se after meas. 58 se after meas. 58 se after meas. 59	0.0 s 0.0 s
se after meas. 45 se after meas. 46 se after meas. 47 se after meas. 48 se after meas. 49 se after meas. 50 se after meas. 51 se after meas. 52 se after meas. 53 se after meas. 54 se after meas. 55 se after meas. 55 se after meas. 55 se after meas. 56 se after meas. 57 se after meas. 58	0.0 s 0.0 s
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se after meas. 45 se after meas. 46 se after meas. 47 se after meas. 48 se after meas. 49 se after meas. 50 se after meas. 51 se after meas. 52 se after meas. 53 se after meas. 54 se after meas. 55 se after meas. 55 se after meas. 55 se after meas. 56	0.0 s 0.0 s
se after meas. 45 se after meas. 46 se after meas. 47 se after meas. 48 se after meas. 49 se after meas. 50 se after meas. 51 se after meas. 52 se after meas. 53 se after meas. 54 se after meas. 54 se after meas. 55	0.0 s 0.0 s 0.0 s 0.0 s 0.0 s 0.0 s 0.0 s 0.0 s 0.0 s 0.0 s
se after meas. 45 se after meas. 46 se after meas. 47 se after meas. 48 se after meas. 49 se after meas. 50 se after meas. 51 se after meas. 52 se after meas. 53 se after meas. 54	0.0 s 0.0 s 0.0 s 0.0 s 0.0 s 0.0 s 0.0 s 0.0 s 0.0 s
se after meas. 45 se after meas. 46 se after meas. 47 se after meas. 48 se after meas. 49 se after meas. 50 se after meas. 51 se after meas. 52 se after meas. 53	0.0 s 0.0 s 0.0 s 0.0 s 0.0 s 0.0 s 0.0 s 0.0 s 0.0 s
se after meas. 45 se after meas. 46 se after meas. 47 se after meas. 48 se after meas. 49 se after meas. 50 se after meas. 51 se after meas. 52	0.0 s 0.0 s 0.0 s 0.0 s 0.0 s 0.0 s 0.0 s 0.0 s
se after meas. 45 se after meas. 46 se after meas. 47 se after meas. 48 se after meas. 49 se after meas. 50 se after meas. 51	0.0 s 0.0 s 0.0 s 0.0 s 0.0 s 0.0 s 0.0 s
se after meas. 45 se after meas. 46 se after meas. 47 se after meas. 48 se after meas. 49 se after meas. 50	0.0 s 0.0 s 0.0 s 0.0 s 0.0 s 0.0 s
se after meas. 45 se after meas. 46 se after meas. 47 se after meas. 48 se after meas. 49	0.0 s 0.0 s 0.0 s 0.0 s 0.0 s
se after meas. 45 se after meas. 46 se after meas. 47 se after meas. 48	0.0 s 0.0 s 0.0 s 0.0 s
se after meas. 45 se after meas. 46 se after meas. 47	0.0 s 0.0 s 0.0 s
se after meas. 45 se after meas. 46	0.0 s 0.0 s
se after meas. 45	0.0 s
	0.0 s
se after meas. 43	0.0 s
se after meas. 42	0.0 s
se after meas. 41	0.0 s
se after meas. 40	0.0 s
se after meas. 39	0.0 s
se after meas. 38	0.0 s
se after meas. 37	0.0 s
se after meas. 36	0.0 s
	0.0 s 0.0 s
	0.0 s
	0.0 s
	0.0 s
	0.0 s
se after meas. 22	0.0 s
se after meas. 21	0.0 s
	se after meas. 20 se after meas. 21 se after meas. 22 se after meas. 23 se after meas. 24 se after meas. 25 se after meas. 26 se after meas. 27 se after meas. 27 se after meas. 28 se after meas. 29 se after meas. 30 se after meas. 31 se after meas. 32 se after meas. 32 se after meas. 33 se after meas. 34 se after meas. 35 se after meas. 36 se after meas. 37

System	
T1	On
M2	On
B4	On
M3	On
V32	Off
Positioning mode	REF
MSMA	S - C - T
Sagittal	R >> L
Coronal	A >> P
Transversal	F >> H
Save uncombined	Off
Coil Combine Mode	Adaptive Combine
AutoAlign	 D ()
Auto Coil Select	Default
Shim mode	Standard
Adjust with body coil	Off
Confirm freq. adjustment	Off
Assume Silicone	Off
! Ref. amplitude 1H	220.000 V
Adjustment Tolerance	Auto
Adjust volume	la a a serta e
Position Orientation	Isocenter Transversal
Rotation	90.00 deg
A >> P	102 mm
R >> L	36 mm
F >> H	24 mm
Dhysis	
Physio 1st Signal/Mode	None
_	
Composing	
Sequence	0#
Introduction	Off 3D
Introduction Dimension	3D
Introduction Dimension Reordering	
Introduction Dimension Reordering Contrasts	3D Centric
Introduction Dimension Reordering Contrasts Bandwidth	3D Centric 1
Introduction Dimension Reordering Contrasts Bandwidth Echo spacing	3D Centric 1 1140 Hz/Px 1.1 ms
Introduction Dimension Reordering Contrasts Bandwidth Echo spacing Turbo factor	3D Centric 1 1140 Hz/Px 1.1 ms
Introduction Dimension Reordering Contrasts Bandwidth Echo spacing Turbo factor EPI factor	3D Centric 1 1140 Hz/Px 1.1 ms
Introduction Dimension Reordering Contrasts Bandwidth Echo spacing Turbo factor	3D Centric 1 1140 Hz/Px 1.1 ms
Introduction Dimension Reordering Contrasts Bandwidth Echo spacing Turbo factor EPI factor RF pulse type Gradient mode	3D Centric 1 1140 Hz/Px 1.1 ms 24 16 Normal Fast
Introduction Dimension Reordering Contrasts Bandwidth Echo spacing Turbo factor EPI factor RF pulse type Gradient mode	3D Centric 1 1140 Hz/Px 1.1 ms 24 16 Normal Fast sinc 2560
Introduction Dimension Reordering Contrasts Bandwidth Echo spacing Turbo factor EPI factor RF pulse type Gradient mode refocussing type flip angle excit	3D Centric 1 1140 Hz/Px 1.1 ms 24 16 Normal Fast sinc 2560 90
Introduction Dimension Reordering Contrasts Bandwidth Echo spacing Turbo factor EPI factor RF pulse type Gradient mode refocussing type flip angle excit phase encoding	3D Centric 1 1140 Hz/Px 1.1 ms 24 16 Normal Fast sinc 2560
Introduction Dimension Reordering Contrasts Bandwidth Echo spacing Turbo factor EPI factor RF pulse type Gradient mode refocussing type flip angle excit phase encoding Maxwell compensation	3D Centric 1 1140 Hz/Px 1.1 ms 24 16 Normal Fast sinc 2560 90 ON Off
Introduction Dimension Reordering Contrasts Bandwidth Echo spacing Turbo factor EPI factor RF pulse type Gradient mode refocussing type flip angle excit phase encoding	3D Centric 1 1140 Hz/Px 1.1 ms 24 16 Normal Fast sinc 2560 90 ON
Introduction Dimension Reordering Contrasts Bandwidth Echo spacing Turbo factor EPI factor RF pulse type Gradient mode refocussing type flip angle excit phase encoding Maxwell compensation ICE program prepscans excite duration	3D Centric 1 1140 Hz/Px 1.1 ms 24 16 Normal Fast sinc 2560 90 ON Off single
Introduction Dimension Reordering Contrasts Bandwidth Echo spacing Turbo factor EPI factor RF pulse type Gradient mode refocussing type flip angle excit phase encoding Maxwell compensation ICE program prepscans excite duration refoc duration	3D Centric 1 1140 Hz/Px 1.1 ms 24 16 Normal Fast sinc 2560 90 ON Off single 0 2560 3840
Introduction Dimension Reordering Contrasts Bandwidth Echo spacing Turbo factor EPI factor RF pulse type Gradient mode refocussing type flip angle excit phase encoding Maxwell compensation ICE program prepscans excite duration refoc duration excite BWTP	3D Centric 1 1140 Hz/Px 1.1 ms 24 16 Normal Fast sinc 2560 90 ON Off single 0 2560 3840 12.0
Introduction Dimension Reordering Contrasts Bandwidth Echo spacing Turbo factor EPI factor RF pulse type Gradient mode refocussing type flip angle excit phase encoding Maxwell compensation ICE program prepscans excite duration refoc duration excite BWTP refoc BWTP	3D Centric 1 1140 Hz/Px 1.1 ms 24 16 Normal Fast sinc 2560 90 ON Off single 0 2560 3840 12.0 8.0
Introduction Dimension Reordering Contrasts Bandwidth Echo spacing Turbo factor EPI factor RF pulse type Gradient mode refocussing type flip angle excit phase encoding Maxwell compensation ICE program prepscans excite duration refoc duration excite BWTP refoc BWTP Variable Flip Angle 01	3D Centric 1 1140 Hz/Px 1.1 ms 24 16 Normal Fast sinc 2560 90 ON Off single 0 2560 3840 12.0 8.0 180
Introduction Dimension Reordering Contrasts Bandwidth Echo spacing Turbo factor EPI factor RF pulse type Gradient mode refocussing type flip angle excit phase encoding Maxwell compensation ICE program prepscans excite duration refoc duration excite BWTP refoc BWTP Variable Flip Angle 01 Variable Flip Angle 02	3D Centric 1 1140 Hz/Px 1.1 ms 24 16 Normal Fast sinc 2560 90 ON Off single 0 2560 3840 12.0 8.0 180 180
Introduction Dimension Reordering Contrasts Bandwidth Echo spacing Turbo factor EPI factor RF pulse type Gradient mode refocussing type flip angle excit phase encoding Maxwell compensation ICE program prepscans excite duration refoc duration excite BWTP refoc BWTP Variable Flip Angle 01 Variable Flip Angle 02 Variable Flip Angle 03	3D Centric 1 1140 Hz/Px 1.1 ms 24 16 Normal Fast sinc 2560 90 ON Off single 0 2560 3840 12.0 8.0 180 180
Introduction Dimension Reordering Contrasts Bandwidth Echo spacing Turbo factor EPI factor RF pulse type Gradient mode refocussing type flip angle excit phase encoding Maxwell compensation ICE program prepscans excite duration refoc duration excite BWTP refoc BWTP Variable Flip Angle 01 Variable Flip Angle 03 Variable Flip Angle 03 Variable Flip Angle 04	3D Centric 1 1140 Hz/Px 1.1 ms 24 16 Normal Fast sinc 2560 90 ON Off single 0 2560 3840 12.0 8.0 180 180 180 180
Introduction Dimension Reordering Contrasts Bandwidth Echo spacing Turbo factor EPI factor RF pulse type Gradient mode refocussing type flip angle excit phase encoding Maxwell compensation ICE program prepscans excite duration refoc duration excite BWTP refoc BWTP Variable Flip Angle 01 Variable Flip Angle 03 Variable Flip Angle 04 Variable Flip Angle 05	3D Centric 1 1140 Hz/Px 1.1 ms 24 16 Normal Fast sinc 2560 90 ON Off single 0 2560 3840 12.0 8.0 180 180 180 180 180
Introduction Dimension Reordering Contrasts Bandwidth Echo spacing Turbo factor EPI factor RF pulse type Gradient mode refocussing type flip angle excit phase encoding Maxwell compensation ICE program prepscans excite duration refoc duration excite BWTP refoc BWTP Variable Flip Angle 01 Variable Flip Angle 02 Variable Flip Angle 03 Variable Flip Angle 04 Variable Flip Angle 05 Variable Flip Angle 05 Variable Flip Angle 06	3D Centric 1 1140 Hz/Px 1.1 ms 24 16 Normal Fast sinc 2560 90 ON Off single 0 2560 3840 12.0 8.0 180 180 180 180 180 180 180
Introduction Dimension Reordering Contrasts Bandwidth Echo spacing Turbo factor EPI factor RF pulse type Gradient mode refocussing type flip angle excit phase encoding Maxwell compensation ICE program prepscans excite duration refoc duration excite BWTP Variable Flip Angle 01 Variable Flip Angle 02 Variable Flip Angle 03 Variable Flip Angle 04 Variable Flip Angle 05 Variable Flip Angle 06 Variable Flip Angle 06 Variable Flip Angle 07	3D Centric 1 1140 Hz/Px 1.1 ms 24 16 Normal Fast sinc 2560 90 ON Off single 0 2560 3840 12.0 8.0 180 180 180 180 180 180 180 180 180 18
Introduction Dimension Reordering Contrasts Bandwidth Echo spacing Turbo factor EPI factor RF pulse type Gradient mode refocussing type flip angle excit phase encoding Maxwell compensation ICE program prepscans excite duration refoc duration refoc BWTP Variable Flip Angle 01 Variable Flip Angle 02 Variable Flip Angle 03 Variable Flip Angle 04 Variable Flip Angle 05 Variable Flip Angle 06 Variable Flip Angle 07 Variable Flip Angle 07 Variable Flip Angle 07 Variable Flip Angle 07 Variable Flip Angle 08	3D Centric 1 1140 Hz/Px 1.1 ms 24 16 Normal Fast sinc 2560 90 ON Off single 0 2560 3840 12.0 8.0 180 180 180 180 180 180 180 180
Introduction Dimension Reordering Contrasts Bandwidth Echo spacing Turbo factor EPI factor RF pulse type Gradient mode refocussing type flip angle excit phase encoding Maxwell compensation ICE program prepscans excite duration refoc duration excite BWTP Variable Flip Angle 01 Variable Flip Angle 02 Variable Flip Angle 03 Variable Flip Angle 04 Variable Flip Angle 05 Variable Flip Angle 06 Variable Flip Angle 06 Variable Flip Angle 07	3D Centric 1 1140 Hz/Px 1.1 ms 24 16 Normal Fast sinc 2560 90 ON Off single 0 2560 3840 12.0 8.0 180 180 180 180 180 180 180 180 180 18
Introduction Dimension Reordering Contrasts Bandwidth Echo spacing Turbo factor EPI factor RF pulse type Gradient mode refocussing type flip angle excit phase encoding Maxwell compensation ICE program prepscans excite duration refoc duration refoc BWTP Variable Flip Angle 01 Variable Flip Angle 02 Variable Flip Angle 03 Variable Flip Angle 04 Variable Flip Angle 05 Variable Flip Angle 05 Variable Flip Angle 06 Variable Flip Angle 07 Variable Flip Angle 07 Variable Flip Angle 08 Variable Flip Angle 08 Variable Flip Angle 08 Variable Flip Angle 09	3D Centric 1 1140 Hz/Px 1.1 ms 24 16 Normal Fast sinc 2560 90 ON Off single 0 2560 3840 12.0 8.0 180 180 180 180 180 180 180 180 180 18

Variable Flip Angle 12	180
Variable Flip Angle 13	180
Variable Flip Angle 14	180
Variable Flip Angle 15	180
Variable Flip Angle 16	180
Variable Flip Angle 17	180
Variable Flip Angle 18	180
Variable Flip Angle 19	180
Variable Flip Angle 20	180
Regular or CS	CS
actual ETL	10
Which areas?	Visual Cortex

\\USER\Feinberglab\Suhyung\GRASE w/ CS for STG\BP_AccVGRASE_24SL_1.0mm_EPI20 Voxel size: 1.0×1.0×1.0 mm Rel. SNR: 1.00

USER: BP_GRASE_SH

171. 1:00	311 VOXCI 3120: 1:0X1:0X1:011	1.00. OTATA: 1.00 OC	PERCEDIT _GIVIGE_GIT
Properties		Pause after meas. 20	0.0 s
Prio Recon	Off	Pause after meas. 21	0.0 s
Before measurement	OII	Pause after meas. 22	0.0 s
After measurement		Pause after meas. 23	0.0 s
Load to viewer	On	Pause after meas. 24	0.0 s
Inline movie	Off	Pause after meas. 25	0.0 s
Auto store images	On	Pause after meas. 26	0.0 s
	Off	Pause after meas. 27	0.0 s
Load to stamp segments	Off	Pause after meas. 28	0.0 s
Load images to graphic	Oii	Pause after meas. 29	0.0 s
segments	0"	Pause after meas. 30	0.0 s
Auto open inline display	Off	Pause after meas. 31	0.0 s
Start measurement without	On	Pause after meas. 32	0.0 s
further preparation	0"	Pause after meas. 33	0.0 s
Wait for user to start	Off	Pause after meas. 34	0.0 s
Start measurements	single	Pause after meas, 35	0.0 s
Routine		Pause after meas. 36	0.0 s
Slab group 1		Pause after meas. 37	0.0 s
Slabs	1	Pause after meas. 38	0.0 s
Dist. factor	0 %	Pause after meas. 39	0.0 s
Position		Pause after meas. 40	0.0 s
	Isocenter	Pause after meas, 41	0.0 s 0.0 s
Orientation	Transversal	Pause after meas. 42	0.0 s
Phase enc. dir.	R >> L		
Rotation	90.00 deg	Pause after meas. 43	0.0 s
Phase oversampling	0 %	Pause after meas. 44	0.0 s
Slice oversampling	0.0 %	Pause after meas. 45	0.0 s
Slices per slab	24	Pause after meas. 46	0.0 s
FoV read	102.0 mm	Pause after meas. 47	0.0 s
FoV phase	35.3 %	Pause after meas. 48	0.0 s
Slice thickness	1.00 mm	Pause after meas. 49	0.0 s
TR	1500 ms	Pause after meas. 50	0.0 s
TE	32.08 ms	Pause after meas. 51	0.0 s
Averages	1	Pause after meas. 52	0.0 s
Concatenations	1	Pause after meas. 53	0.0 s
Filter	None	Pause after meas. 54	0.0 s
Coil elements	B4;M2,3;T1	Pause after meas. 55	0.0 s
		Pause after meas. 56	0.0 s
Contrast		Pause after meas. 57	0.0 s
Magn. preparation	None	Pause after meas. 58	0.0 s
Flip angle	160 deg	Pause after meas. 59	0.0 s
Fat suppr.	Fat sat.	Multiple series	Off
Fat sat. mode	Strong	1	
Averaging mode	Long term	Resolution	
Reconstruction	Magnitude	Base resolution	102
Measurements	60	Phase resolution	100 %
Pause after meas. 1	0.0 s	Slice resolution	100 %
Pause after meas. 2	0.0 s 0.0 s	Slice partial Fourier	Off
Pause after meas. 3	0.0 s	Interpolation	Off
Pause after meas. 4	0.0 s 0.0 s	PAT mode	None
Pause after meas. 5	0.0 s 0.0 s		
		Prescan Normalize	Off
Pause after meas. 6	0.0 s	Raw filter	Off
Pause after meas. 7	0.0 s	0	
Pause after meas. 8	0.0 s	Geometry	
Pause after meas. 9	0.0 s	Series	Interleaved
Pause after meas. 10	0.0 s	Sat. region 1	
Pause after meas. 11	0.0 s	Thickness	36 mm
Pause after meas. 12	0.0 s	Position	Isocenter
Pause after meas. 13	0.0 s	Orientation	Sagittal
Pause after meas. 14	0.0 s	Special sat.	None
Pause after meas. 15	0.0 s		
Pause after meas. 16	0.0 s	Table position	Н
Pause after meas. 17	0.0 s	Table position	0 mm
Pause after meas. 18	0.0 s	Inline Composing	Off
Pause after meas. 19	0.0 s	•	

System	
T1	On
M2	On
B4	On
M3	On
V32	Off
Positioning mode	REF
MSMA	S-C-T
Sagittal	R >> L
Coronal	A >> P
Transversal	F >> H
Save uncombined	Off
Coil Combine Mode	Adaptive Combine
AutoAlign Auto Coil Select	Default
Auto Coil Select	
Shim mode	Standard
Adjust with body coil	Off
Confirm freq. adjustment	Off
Assume Silicone	Off
! Ref. amplitude 1H	220.000 V
Adjustment Tolerance	Auto
Adjust volume	
Position	Isocenter
Orientation	Transversal
Rotation	90.00 deg
A >> P	102 mm
R >> L	36 mm
F >> H	24 mm
Physio	
1st Signal/Mode	None
Composing	
Sequence	Off
Sequence Introduction	Off 3D
Sequence Introduction Dimension	3D
Sequence Introduction Dimension Reordering	
Sequence Introduction Dimension	3D Centric
Sequence Introduction Dimension Reordering Contrasts Bandwidth	3D Centric 1 1140 Hz/Px
Sequence Introduction Dimension Reordering Contrasts Bandwidth Echo spacing	3D Centric 1 1140 Hz/Px 1.1 ms
Sequence Introduction Dimension Reordering Contrasts Bandwidth Echo spacing Turbo factor	3D Centric 1 1140 Hz/Px 1.1 ms
Sequence Introduction Dimension Reordering Contrasts Bandwidth Echo spacing Turbo factor EPI factor	3D Centric 1 1140 Hz/Px 1.1 ms
Sequence Introduction Dimension Reordering Contrasts Bandwidth Echo spacing Turbo factor EPI factor RF pulse type	3D Centric 1 1140 Hz/Px 1.1 ms 24 20 Normal
Sequence Introduction Dimension Reordering Contrasts Bandwidth Echo spacing Turbo factor EPI factor RF pulse type Gradient mode	3D Centric 1 1140 Hz/Px 1.1 ms 24 20 Normal Fast
Sequence Introduction Dimension Reordering Contrasts Bandwidth Echo spacing Turbo factor EPI factor RF pulse type Gradient mode refocussing type	3D Centric 1 1140 Hz/Px 1.1 ms 24 20 Normal Fast variable sinc
Sequence Introduction Dimension Reordering Contrasts Bandwidth Echo spacing Turbo factor EPI factor RF pulse type Gradient mode refocussing type flip angle excit	3D Centric 1 1140 Hz/Px 1.1 ms 24 20 Normal Fast variable sinc 90
Sequence Introduction Dimension Reordering Contrasts Bandwidth Echo spacing Turbo factor EPI factor RF pulse type Gradient mode refocussing type flip angle excit phase encoding	3D Centric 1 1140 Hz/Px 1.1 ms 24 20 Normal Fast variable sinc 90 ON
Sequence Introduction Dimension Reordering Contrasts Bandwidth Echo spacing Turbo factor EPI factor RF pulse type Gradient mode refocussing type flip angle excit phase encoding Maxwell compensation	3D Centric 1 1140 Hz/Px 1.1 ms 24 20 Normal Fast variable sinc 90 ON Off
Sequence Introduction Dimension Reordering Contrasts Bandwidth Echo spacing Turbo factor EPI factor RF pulse type Gradient mode refocussing type flip angle excit phase encoding Maxwell compensation ICE program	3D Centric 1 1140 Hz/Px 1.1 ms 24 20 Normal Fast variable sinc 90 ON Off single
Sequence Introduction Dimension Reordering Contrasts Bandwidth Echo spacing Turbo factor EPI factor RF pulse type Gradient mode refocussing type flip angle excit phase encoding Maxwell compensation ICE program prepscans	3D Centric 1 1140 Hz/Px 1.1 ms 24 20 Normal Fast variable sinc 90 ON Off single 0
Sequence Introduction Dimension Reordering Contrasts Bandwidth Echo spacing Turbo factor EPI factor RF pulse type Gradient mode refocussing type flip angle excit phase encoding Maxwell compensation ICE program prepscans excite duration	3D Centric 1 1140 Hz/Px 1.1 ms 24 20 Normal Fast variable sinc 90 ON Off single 0 2560
Sequence Introduction Dimension Reordering Contrasts Bandwidth Echo spacing Turbo factor EPI factor RF pulse type Gradient mode refocussing type flip angle excit phase encoding Maxwell compensation ICE program prepscans excite duration refoc duration	3D Centric 1 1140 Hz/Px 1.1 ms 24 20 Normal Fast variable sinc 90 ON Off single 0 2560 3840
Sequence Introduction Dimension Reordering Contrasts Bandwidth Echo spacing Turbo factor EPI factor RF pulse type Gradient mode refocussing type flip angle excit phase encoding Maxwell compensation ICE program prepscans excite duration refoc duration excite BWTP	3D Centric 1 1140 Hz/Px 1.1 ms 24 20 Normal Fast variable sinc 90 ON Off single 0 2560 3840 12.0
Sequence Introduction Dimension Reordering Contrasts Bandwidth Echo spacing Turbo factor EPI factor RF pulse type Gradient mode refocussing type flip angle excit phase encoding Maxwell compensation ICE program prepscans excite duration refoc duration excite BWTP refoc BWTP	3D Centric 1 1140 Hz/Px 1.1 ms 24 20 Normal Fast variable sinc 90 ON Off single 0 2560 3840 12.0 8.0
Sequence Introduction Dimension Reordering Contrasts Bandwidth Echo spacing Turbo factor EPI factor RF pulse type Gradient mode refocussing type flip angle excit phase encoding Maxwell compensation ICE program prepscans excite duration refoc duration excite BWTP refoc BWTP Variable Flip Angle 01	3D Centric 1 1140 Hz/Px 1.1 ms 24 20 Normal Fast variable sinc 90 ON Off single 0 2560 3840 12.0 8.0 180
Sequence Introduction Dimension Reordering Contrasts Bandwidth Echo spacing Turbo factor EPI factor RF pulse type Gradient mode refocussing type flip angle excit phase encoding Maxwell compensation ICE program prepscans excite duration refoc duration excite BWTP refoc BWTP Variable Flip Angle 01 Variable Flip Angle 02	3D Centric 1 1140 Hz/Px 1.1 ms 24 20 Normal Fast variable sinc 90 ON Off single 0 2560 3840 12.0 8.0 180
Sequence Introduction Dimension Reordering Contrasts Bandwidth Echo spacing Turbo factor EPI factor RF pulse type Gradient mode refocussing type flip angle excit phase encoding Maxwell compensation ICE program prepscans excite duration refoc duration excite BWTP refoc BWTP Variable Flip Angle 01 Variable Flip Angle 02 Variable Flip Angle 03	3D Centric 1 1140 Hz/Px 1.1 ms 24 20 Normal Fast variable sinc 90 ON Off single 0 2560 3840 12.0 8.0 180 180
Sequence Introduction Dimension Reordering Contrasts Bandwidth Echo spacing Turbo factor EPI factor RF pulse type Gradient mode refocussing type flip angle excit phase encoding Maxwell compensation ICE program prepscans excite duration refoc duration excite BWTP refoc BWTP Variable Flip Angle 01 Variable Flip Angle 03 Variable Flip Angle 03 Variable Flip Angle 04	3D Centric 1 1140 Hz/Px 1.1 ms 24 20 Normal Fast variable sinc 90 ON Off single 0 2560 3840 12.0 8.0 180 180 180
Sequence Introduction Dimension Reordering Contrasts Bandwidth Echo spacing Turbo factor EPI factor RF pulse type Gradient mode refocussing type flip angle excit phase encoding Maxwell compensation ICE program prepscans excite duration refoc duration refoc BWTP Variable Flip Angle 01 Variable Flip Angle 03 Variable Flip Angle 04 Variable Flip Angle 05	3D Centric 1 1140 Hz/Px 1.1 ms 24 20 Normal Fast variable sinc 90 ON Off single 0 2560 3840 12.0 8.0 180 180 180 180
Sequence Introduction Dimension Reordering Contrasts Bandwidth Echo spacing Turbo factor EPI factor RF pulse type Gradient mode refocussing type flip angle excit phase encoding Maxwell compensation ICE program prepscans excite duration refoc duration excite BWTP refoc BWTP Variable Flip Angle 01 Variable Flip Angle 03 Variable Flip Angle 04 Variable Flip Angle 05 Variable Flip Angle 05 Variable Flip Angle 06	3D Centric 1 1140 Hz/Px 1.1 ms 24 20 Normal Fast variable sinc 90 ON Off single 0 2560 3840 12.0 8.0 180 180 180 180 180
Sequence Introduction Dimension Reordering Contrasts Bandwidth Echo spacing Turbo factor EPI factor RF pulse type Gradient mode refocussing type flip angle excit phase encoding Maxwell compensation ICE program prepscans excite duration refoc duration refoc duration excite BWTP Variable Flip Angle 01 Variable Flip Angle 02 Variable Flip Angle 03 Variable Flip Angle 04 Variable Flip Angle 05 Variable Flip Angle 06 Variable Flip Angle 06 Variable Flip Angle 07	3D Centric 1 1140 Hz/Px 1.1 ms 24 20 Normal Fast variable sinc 90 ON Off single 0 2560 3840 12.0 8.0 180 180 180 180 180 180 180 180
Sequence Introduction Dimension Reordering Contrasts Bandwidth Echo spacing Turbo factor EPI factor RF pulse type Gradient mode refocussing type flip angle excit phase encoding Maxwell compensation ICE program prepscans excite duration refoc duration refoc duration excite BWTP Variable Flip Angle 01 Variable Flip Angle 02 Variable Flip Angle 03 Variable Flip Angle 04 Variable Flip Angle 05 Variable Flip Angle 06 Variable Flip Angle 07 Variable Flip Angle 07 Variable Flip Angle 07 Variable Flip Angle 08	3D Centric 1 1140 Hz/Px 1.1 ms 24 20 Normal Fast variable sinc 90 ON Off single 0 2560 3840 12.0 8.0 180 180 180 180 180 180 180 180 180
Introduction Dimension Reordering Contrasts Bandwidth Echo spacing Turbo factor EPI factor RF pulse type Gradient mode refocussing type flip angle excit phase encoding Maxwell compensation ICE program prepscans excite duration refoc duration refoc BWTP Variable Flip Angle 01 Variable Flip Angle 02 Variable Flip Angle 03 Variable Flip Angle 04 Variable Flip Angle 05 Variable Flip Angle 06 Variable Flip Angle 07 Variable Flip Angle 07 Variable Flip Angle 08 Variable Flip Angle 08 Variable Flip Angle 09	3D Centric 1 1140 Hz/Px 1.1 ms 24 20 Normal Fast variable sinc 90 ON Off single 0 2560 3840 12.0 8.0 180 180 180 180 180 180 180 180 180 18
Sequence Introduction Dimension Reordering Contrasts Bandwidth Echo spacing Turbo factor EPI factor RF pulse type Gradient mode refocussing type flip angle excit phase encoding Maxwell compensation ICE program prepscans excite duration refoc duration refoc duration excite BWTP Variable Flip Angle 01 Variable Flip Angle 02 Variable Flip Angle 03 Variable Flip Angle 04 Variable Flip Angle 05 Variable Flip Angle 06 Variable Flip Angle 07 Variable Flip Angle 07 Variable Flip Angle 07 Variable Flip Angle 08	3D Centric 1 1140 Hz/Px 1.1 ms 24 20 Normal Fast variable sinc 90 ON Off single 0 2560 3840 12.0 8.0 180 180 180 180 180 180 180 180 180

V	ariable Flip Angle 12	180	
V	ariable Flip Angle 13	180	
V	ariable Flip Angle 14	180	
V	ariable Flip Angle 15	180	
V	ariable Flip Angle 16	180	
V	ariable Flip Angle 17	180	
V	ariable Flip Angle 18	180	
V	ariable Flip Angle 19	180	
V	ariable Flip Angle 20	180	
R	legular or CS	CS	
а	ctual ETL	10	
٧	Vhich areas?	Moto	or Cortex

\\USER\Feinberglab\Suhyung\GRASE w/ CS for STG\BP_AccVGRASE_24SL_1.0mm_EPI16

roperties		Pause after meas. 20	0.0 s
Prio Recon	Off	Pause after meas. 21	0.0 s
Before measurement	Oli	Pause after meas. 22	0.0 s
		Pause after meas. 23	0.0 s
After measurement Load to viewer	On	Pause after meas. 24	0.0 s
		Pause after meas. 25	0.0 s
Inline movie	Off	Pause after meas. 26	0.0 s
Auto store images	On O#	Pause after meas. 27	0.0 s
Load to stamp segments	Off Off	Pause after meas. 28	0.0 s
Load images to graphic	Off	Pause after meas. 29	0.0 s
segments	0"	Pause after meas. 30	0.0 s
Auto open inline display	Off	Pause after meas. 31	0.0 s
Start measurement without	On	Pause after meas. 32	0.0 s
further preparation	0"	Pause after meas. 33	0.0 s
Wait for user to start	Off	Pause after meas. 34	0.0 s
Start measurements	single	Pause after meas. 35	0.0 s
outine		Pause after meas, 36	0.0 s
Slab group 1		Pause after meas, 37	0.0 s
Slabs	1	Pause after meas. 38	0.0 s
Dist. factor	0 %	Pause after meas. 39	0.0 s
Position	Isocenter	Pause after meas. 40	0.0 s
Orientation	Transversal	Pause after meas. 41	0.0 s
Phase enc. dir.	R >> L	Pause after meas. 42	0.0 s
Rotation		Pause after meas. 43	0.0 s
	90.00 deg 0 %	Pause after meas. 44	0.0 s
Phase oversampling		Pause after meas. 45	0.0 s
Slice oversampling	0.0 %	Pause after meas. 46	0.0 s
Slices per slab	24	Pause after meas, 47	0.0 s 0.0 s
FoV read	102.0 mm		
FoV phase	35.3 %	Pause after meas. 48	0.0 s
Slice thickness	1.00 mm	Pause after meas. 49	0.0 s
TR	1500 ms	Pause after meas. 50	0.0 s
TE	27.6 ms	Pause after meas. 51	0.0 s
Averages	1	Pause after meas. 52	0.0 s
Concatenations	1	Pause after meas. 53	0.0 s
Filter	None	Pause after meas. 54	0.0 s
Coil elements	B4;M2,3;T1	Pause after meas. 55	0.0 s
ontrast		Pause after meas. 56	0.0 s
	None	Pause after meas. 57	0.0 s
Magn. preparation		Pause after meas. 58	0.0 s
Flip angle Fat suppr.	160 deg Fat sat.	Pause after meas. 59	0.0 s
Fat sat. mode		Multiple series	Off
rai sai. mode	Strong	····· Resolution	
Averaging mode	Long term	Base resolution	102
Reconstruction	Magnitude	Phase resolution	102
Measurements	60	Slice resolution	100 %
Pause after meas. 1	0.0 s		
Pause after meas. 2	0.0 s	Slice partial Fourier	Off
Pause after meas. 3	0.0 s	Interpolation	Off
Pause after meas. 4	0.0 s	PAT mode	None
Pause after meas. 5	0.0 s		
Pause after meas. 6	0.0 s	Prescan Normalize	Off
Pause after meas. 7	0.0 s	Raw filter	Off
Pause after meas. 8	0.0 s	Geometry	
Pause after meas. 9	0.0 s 0.0 s	Series	Interleaved
Pause after meas. 9 Pause after meas. 10		JEHES	inteneaveu
	0.0 s	Sat. region 1	
Pause after meas. 11	0.0 s	Thickness	36 mm
Pause after meas. 12	0.0 s	Position	Isocenter
Pause after meas. 13	0.0 s	Orientation	Sagittal
Pause after meas. 14	0.0 s	Special sat.	None
Pause after meas. 15	0.0 s		
Pause after meas. 16	0.0 s	Table position	Н
Pause after meas. 17	0.0 s	Table position	0 mm
Pause after meas. 18	0.0 s	Inline Composing	Off
Pause after meas, 19	0.0 s	ı	

System	
System T1	On
M2	On
B4	On
= :	On
M3	-··
V32	Off
Positioning mode	REF
MSMA	S - C - T
Sagittal	R >> L
Coronal	A >> P
Transversal	F >> H
Save uncombined	Off
Coil Combine Mode	Adaptive Combine
AutoAlign	
Auto Coil Select	Default
Shim mode	Standard
Adjust with body coil	Off
Confirm freq. adjustment	Off
Assume Silicone	Off
! Ref. amplitude 1H	220.000 V
Adjustment Tolerance	Auto
Adjust volume	
Position	Isocenter
Orientation	Transversal
Rotation	90.00 deg
A >> P	102 mm
R >> L	36 mm
F >> H	24 mm
1 22 11	2111111
Physio	
1st Signal/Mode	None
Composing	
Sequence	
Sequence Introduction	Off
Introduction	Off 3D
Introduction Dimension	3D
Introduction Dimension Reordering	3D Centric
Introduction Dimension Reordering Contrasts	3D Centric 1
Introduction Dimension Reordering Contrasts Bandwidth	3D Centric 1 1140 Hz/Px
Introduction Dimension Reordering Contrasts	3D Centric 1
Introduction Dimension Reordering Contrasts Bandwidth Echo spacing Turbo factor	3D Centric 1 1140 Hz/Px 1.1 ms
Introduction Dimension Reordering Contrasts Bandwidth Echo spacing	3D Centric 1 1140 Hz/Px 1.1 ms
Introduction Dimension Reordering Contrasts Bandwidth Echo spacing Turbo factor	3D Centric 1 1140 Hz/Px 1.1 ms
Introduction Dimension Reordering Contrasts Bandwidth Echo spacing Turbo factor EPI factor	3D Centric 1 1140 Hz/Px 1.1 ms
Introduction Dimension Reordering Contrasts Bandwidth Echo spacing Turbo factor EPI factor RF pulse type Gradient mode	3D Centric 1 1140 Hz/Px 1.1 ms 24 16 Normal Fast
Introduction Dimension Reordering Contrasts Bandwidth Echo spacing Turbo factor EPI factor RF pulse type Gradient mode	3D Centric 1 1140 Hz/Px 1.1 ms 24 16 Normal Fast variable sinc
Introduction Dimension Reordering Contrasts Bandwidth Echo spacing Turbo factor EPI factor RF pulse type Gradient mode refocussing type flip angle excit	3D Centric 1 1140 Hz/Px 1.1 ms 24 16 Normal Fast variable sinc 90
Introduction Dimension Reordering Contrasts Bandwidth Echo spacing Turbo factor EPI factor RF pulse type Gradient mode refocussing type flip angle excit phase encoding	3D Centric 1 1140 Hz/Px 1.1 ms 24 16 Normal Fast variable sinc 90 ON
Introduction Dimension Reordering Contrasts Bandwidth Echo spacing Turbo factor EPI factor RF pulse type Gradient mode refocussing type flip angle excit phase encoding Maxwell compensation	3D Centric 1 1140 Hz/Px 1.1 ms 24 16 Normal Fast variable sinc 90 ON Off
Introduction Dimension Reordering Contrasts Bandwidth Echo spacing Turbo factor EPI factor RF pulse type Gradient mode refocussing type flip angle excit phase encoding Maxwell compensation ICE program	3D Centric 1 1140 Hz/Px 1.1 ms 24 16 Normal Fast variable sinc 90 ON Off single
Introduction Dimension Reordering Contrasts Bandwidth Echo spacing Turbo factor EPI factor RF pulse type Gradient mode refocussing type flip angle excit phase encoding Maxwell compensation ICE program prepscans	3D Centric 1 1140 Hz/Px 1.1 ms 24 16 Normal Fast variable sinc 90 ON Off single 0
Introduction Dimension Reordering Contrasts Bandwidth Echo spacing Turbo factor EPI factor RF pulse type Gradient mode refocussing type flip angle excit phase encoding Maxwell compensation ICE program prepscans excite duration	3D Centric 1 1140 Hz/Px 1.1 ms 24 16 Normal Fast variable sinc 90 ON Off single 0 2560
Introduction Dimension Reordering Contrasts Bandwidth Echo spacing Turbo factor EPI factor RF pulse type Gradient mode refocussing type flip angle excit phase encoding Maxwell compensation ICE program prepscans excite duration refoc duration	3D Centric 1 1140 Hz/Px 1.1 ms 24 16 Normal Fast variable sinc 90 ON Off single 0 2560 3840
Introduction Dimension Reordering Contrasts Bandwidth Echo spacing Turbo factor EPI factor RF pulse type Gradient mode refocussing type flip angle excit phase encoding Maxwell compensation ICE program prepscans excite duration refoc duration excite BWTP	3D Centric 1 1140 Hz/Px 1.1 ms 24 16 Normal Fast variable sinc 90 ON Off single 0 2560 3840 12.0
Introduction Dimension Reordering Contrasts Bandwidth Echo spacing Turbo factor EPI factor RF pulse type Gradient mode refocussing type flip angle excit phase encoding Maxwell compensation ICE program prepscans excite duration refoc duration excite BWTP refoc BWTP	3D Centric 1 1140 Hz/Px 1.1 ms 24 16 Normal Fast variable sinc 90 ON Off single 0 2560 3840 12.0 8.0
Introduction Dimension Reordering Contrasts Bandwidth Echo spacing Turbo factor EPI factor RF pulse type Gradient mode refocussing type flip angle excit phase encoding Maxwell compensation ICE program prepscans excite duration refoc duration excite BWTP refoc BWTP Variable Flip Angle 01	3D Centric 1 1140 Hz/Px 1.1 ms 24 16 Normal Fast variable sinc 90 ON Off single 0 2560 3840 12.0 8.0 180
Introduction Dimension Reordering Contrasts Bandwidth Echo spacing Turbo factor EPI factor RF pulse type Gradient mode refocussing type flip angle excit phase encoding Maxwell compensation ICE program prepscans excite duration refoc duration excite BWTP refoc BWTP Variable Flip Angle 01 Variable Flip Angle 02	3D Centric 1 1140 Hz/Px 1.1 ms 24 16 Normal Fast variable sinc 90 ON Off single 0 2560 3840 12.0 8.0
Introduction Dimension Reordering Contrasts Bandwidth Echo spacing Turbo factor EPI factor RF pulse type Gradient mode refocussing type flip angle excit phase encoding Maxwell compensation ICE program prepscans excite duration refoc duration excite BWTP refoc BWTP Variable Flip Angle 01	3D Centric 1 1140 Hz/Px 1.1 ms 24 16 Normal Fast variable sinc 90 ON Off single 0 2560 3840 12.0 8.0 180
Introduction Dimension Reordering Contrasts Bandwidth Echo spacing Turbo factor EPI factor RF pulse type Gradient mode refocussing type flip angle excit phase encoding Maxwell compensation ICE program prepscans excite duration refoc duration refoc duration excite BWTP refoc BWTP Variable Flip Angle 01 Variable Flip Angle 02 Variable Flip Angle 03 Variable Flip Angle 04	3D Centric 1 1140 Hz/Px 1.1 ms 24 16 Normal Fast variable sinc 90 ON Off single 0 2560 3840 12.0 8.0 180
Introduction Dimension Reordering Contrasts Bandwidth Echo spacing Turbo factor EPI factor RF pulse type Gradient mode refocussing type flip angle excit phase encoding Maxwell compensation ICE program prepscans excite duration refoc duration excite BWTP refoc BWTP Variable Flip Angle 01 Variable Flip Angle 02 Variable Flip Angle 03	3D Centric 1 1140 Hz/Px 1.1 ms 24 16 Normal Fast variable sinc 90 ON Off single 0 2560 3840 12.0 8.0 180 180
Introduction Dimension Reordering Contrasts Bandwidth Echo spacing Turbo factor EPI factor RF pulse type Gradient mode refocussing type flip angle excit phase encoding Maxwell compensation ICE program prepscans excite duration refoc duration refoc duration excite BWTP refoc BWTP Variable Flip Angle 01 Variable Flip Angle 02 Variable Flip Angle 03 Variable Flip Angle 04	3D Centric 1 1140 Hz/Px 1.1 ms 24 16 Normal Fast variable sinc 90 ON Off single 0 2560 3840 12.0 8.0 180 180 180
Introduction Dimension Reordering Contrasts Bandwidth Echo spacing Turbo factor EPI factor RF pulse type Gradient mode refocussing type flip angle excit phase encoding Maxwell compensation ICE program prepscans excite duration refoc duration excite BWTP refoc BWTP Variable Flip Angle 01 Variable Flip Angle 02 Variable Flip Angle 03 Variable Flip Angle 04 Variable Flip Angle 05 Variable Flip Angle 05 Variable Flip Angle 06	3D Centric 1 1140 Hz/Px 1.1 ms 24 16 Normal Fast variable sinc 90 ON Off single 0 2560 3840 12.0 8.0 180 180 180 180 180
Introduction Dimension Reordering Contrasts Bandwidth Echo spacing Turbo factor EPI factor RF pulse type Gradient mode refocussing type flip angle excit phase encoding Maxwell compensation ICE program prepscans excite duration refoc duration refoc duration excite BWTP Variable Flip Angle 01 Variable Flip Angle 02 Variable Flip Angle 03 Variable Flip Angle 04 Variable Flip Angle 05 Variable Flip Angle 06 Variable Flip Angle 06 Variable Flip Angle 07	3D Centric 1 1140 Hz/Px 1.1 ms 24 16 Normal Fast variable sinc 90 ON Off single 0 2560 3840 12.0 8.0 180 180 180 180 180 180 180 180
Introduction Dimension Reordering Contrasts Bandwidth Echo spacing Turbo factor EPI factor RF pulse type Gradient mode refocussing type flip angle excit phase encoding Maxwell compensation ICE program prepscans excite duration refoc duration refoc BWTP Variable Flip Angle 01 Variable Flip Angle 02 Variable Flip Angle 03 Variable Flip Angle 04 Variable Flip Angle 05 Variable Flip Angle 06 Variable Flip Angle 07 Variable Flip Angle 07 Variable Flip Angle 07 Variable Flip Angle 07 Variable Flip Angle 08	3D Centric 1 1140 Hz/Px 1.1 ms 24 16 Normal Fast variable sinc 90 ON Off single 0 2560 3840 12.0 8.0 180 180 180 180 180 180 180 180 180 18
Introduction Dimension Reordering Contrasts Bandwidth Echo spacing Turbo factor EPI factor RF pulse type Gradient mode refocussing type flip angle excit phase encoding Maxwell compensation ICE program prepscans excite duration refoc duration refoc BWTP Variable Flip Angle 01 Variable Flip Angle 02 Variable Flip Angle 03 Variable Flip Angle 04 Variable Flip Angle 05 Variable Flip Angle 06 Variable Flip Angle 07 Variable Flip Angle 07 Variable Flip Angle 08 Variable Flip Angle 08 Variable Flip Angle 08 Variable Flip Angle 09	3D Centric 1 1140 Hz/Px 1.1 ms 24 16 Normal Fast variable sinc 90 ON Off single 0 2560 3840 12.0 8.0 180 180 180 180 180 180 180 180
Introduction Dimension Reordering Contrasts Bandwidth Echo spacing Turbo factor EPI factor RF pulse type Gradient mode refocussing type flip angle excit phase encoding Maxwell compensation ICE program prepscans excite duration refoc duration refoc BWTP Variable Flip Angle 01 Variable Flip Angle 02 Variable Flip Angle 03 Variable Flip Angle 04 Variable Flip Angle 05 Variable Flip Angle 06 Variable Flip Angle 07 Variable Flip Angle 07 Variable Flip Angle 07 Variable Flip Angle 07 Variable Flip Angle 08	3D Centric 1 1140 Hz/Px 1.1 ms 24 16 Normal Fast variable sinc 90 ON Off single 0 2560 3840 12.0 8.0 180 180 180 180 180 180 180 180 180 18

Variable Flip Angle 12	180
Variable Flip Angle 13	180
Variable Flip Angle 14	180
Variable Flip Angle 15	180
Variable Flip Angle 16	180
Variable Flip Angle 17	180
Variable Flip Angle 18	180
Variable Flip Angle 19	180
Variable Flip Angle 20	180
Regular or CS	CS
actual ETL	10
Which areas?	Motor Cortex

\\USER\Feinberglab\Suhyung\GRASE w/ CS for

TA: 1:30 PAT: 0	Off Voxel size: 1.0×1.0×1.0 mm	Rel. SNR: 1.00	USER: BP_GRASE_SH
roperties	1	Pause after meas. 20	0.0 s
Prio Recon	Off	Pause after meas. 21	0.0 s
Before measurement	Oli	Pause after meas. 22	0.0 s
After measurement		Pause after meas. 23	0.0 s
Load to viewer	On	Pause after meas. 24	0.0 s
Inline movie	Off	Pause after meas. 25	0.0 s
Auto store images	On	Pause after meas. 26	0.0 s
Load to stamp segments	Off	Pause after meas. 27	0.0 s
Load images to graphic	Off	Pause after meas. 28	0.0 s
segments	Oli	Pause after meas. 29	0.0 s
Auto open inline display	Off	Pause after meas. 30	0.0 s
Start measurement without	On	Pause after meas. 31	0.0 s
further preparation	Oll	Pause after meas. 32	0.0 s
Wait for user to start	Off	Pause after meas. 33	0.0 s
Start measurements	single	Pause after meas. 34	0.0 s
Start measurements	Single	Pause after meas. 35	0.0 s
outine		Pause after meas. 36	0.0 s
Slab group 1		Pause after meas. 37	0.0 s
Slabs	1	Pause after meas. 38	0.0 s
Dist. factor	0 %	Pause after meas. 39	0.0 s
Position	Isocenter	Pause after meas. 40	0.0 s
Orientation	Transversal	Pause after meas. 41	0.0 s
Phase enc. dir.	R >> L	Pause after meas. 42	0.0 s
Rotation	90.00 deg	Pause after meas, 43	0.0 s
Phase oversampling	0 %	Pause after meas. 44	0.0 s
Slice oversampling	0.0 %	Pause after meas. 45	0.0 s
Slices per slab	24	Pause after meas, 46	0.0 s
FoV read	102.0 mm	Pause after meas. 47	0.0 s
FoV phase	35.3 %	Pause after meas. 48	0.0 s
Slice thickness	1.00 mm	Pause after meas. 49	0.0 s
TR	1500 ms	Pause after meas. 50	0.0 s
TE	30.8 ms	Pause after meas, 51	0.0 s
	1	Pause after meas. 52	0.0 s
Averages	1	Pause after meas, 53	0.0 s
Concatenations Filter	None	Pause after meas, 54	0.0 s
		Pause after meas. 55	0.0 s
Coil elements	B4;M2,3;T1	Pause after meas, 56	0.0 s
Contrast		Pause after meas. 57	0.0 s
Magn. preparation	None	Pause after meas. 58	0.0 s
Flip angle	160 deg	Pause after meas, 59	0.0 s
Fat suppr.	Fat sat.	Multiple series	Off
Fat sat. mode	Strong	Multiple Selles	Oli
		Resolution	
Averaging mode	Long term	Base resolution	102
Reconstruction	Magnitude	Phase resolution	100 %
Measurements	60	Slice resolution	100 %
Pause after meas. 1	0.0 s	Slice partial Fourier	Off
Pause after meas. 2	0.0 s	Interpolation	Off
Pause after meas. 3	0.0 s	DAT	NI
Pause after meas. 4	0.0 s	PAT mode	None
Pause after meas. 5	0.0 s	Prescan Normalize	Off
Pause after meas. 6	0.0 s	Raw filter	Off
Pause after meas. 7	0.0 s		.
Pause after meas. 8	<u> </u>	Geometry	
Pause after meas. 9	0.0 s	Series	Interleaved
Pause after meas. 10	0.0 s	Sat region 1	
Pause after meas. 11	0.0 s	Sat. region 1	26 mm
Pause after meas. 12	0.0 s	Thickness Position	36 mm
Pause after meas. 13	0.0 s		Isocenter
Pause after meas. 14	0.0 s	Orientation	Sagittal
Pause after meas. 15	0.0 s	Special sat.	None
Pause after meas. 16	0.0 s	Table position	Н
Pause after meas. 17	0.0 s	Table position	0 mm
Pause after meas, 18	0.0 s		
rause after frieds. To	0.0 5	Inline Composing	Off

System	
T1	On
M2	On
B4	On
M3	On
V32	Off
Positioning mode	REF
MSMA	S - C - T
Sagittal	R >> L
Coronal	A >> P
Transversal	F >> H
Save uncombined	Off
Coil Combine Mode	Adaptive Combine
AutoAlign	
Auto Coil Select	Default
Shim mode	Standard
Adjust with body coil	Off
Confirm freq. adjustment	Off
Assume Silicone	Off
! Ref. amplitude 1H	220.000 V
Adjustment Tolerance	Auto
Adjust volume	Auto
Position	Isocenter
Orientation	Transversal
Rotation	90.00 deg
A >> P	102 mm
R >> L	36 mm
F >> H	24 mm
I	2111111
Physio	None
1st Signal/Mode	None
Composing	
Sequence	
Sequence Introduction	Off
Sequence Introduction Dimension	Off 3D
Sequence Introduction	
Sequence Introduction Dimension	3D
Sequence Introduction Dimension Reordering	3D Centric 1 1140 Hz/Px
Sequence Introduction Dimension Reordering Contrasts	3D Centric 1
Sequence Introduction Dimension Reordering Contrasts Bandwidth	3D Centric 1 1140 Hz/Px
Sequence Introduction Dimension Reordering Contrasts Bandwidth Echo spacing	3D Centric 1 1140 Hz/Px 1.1 ms
Sequence Introduction Dimension Reordering Contrasts Bandwidth Echo spacing Turbo factor	3D Centric 1 1140 Hz/Px 1.1 ms
Sequence Introduction Dimension Reordering Contrasts Bandwidth Echo spacing Turbo factor EPI factor	3D Centric 1 1140 Hz/Px 1.1 ms
Sequence Introduction Dimension Reordering Contrasts Bandwidth Echo spacing Turbo factor EPI factor RF pulse type Gradient mode	3D Centric 1 1140 Hz/Px 1.1 ms 24 20 Normal
Sequence Introduction Dimension Reordering Contrasts Bandwidth Echo spacing Turbo factor EPI factor RF pulse type	3D Centric 1 1140 Hz/Px 1.1 ms 24 20 Normal Fast
Sequence Introduction Dimension Reordering Contrasts Bandwidth Echo spacing Turbo factor EPI factor RF pulse type Gradient mode refocussing type	3D Centric 1 1140 Hz/Px 1.1 ms 24 20 Normal Fast variable sinc
Sequence Introduction Dimension Reordering Contrasts Bandwidth Echo spacing Turbo factor EPI factor RF pulse type Gradient mode refocussing type flip angle excit	3D Centric 1 1140 Hz/Px 1.1 ms 24 20 Normal Fast variable sinc 90
Sequence Introduction Dimension Reordering Contrasts Bandwidth Echo spacing Turbo factor EPI factor RF pulse type Gradient mode refocussing type flip angle excit phase encoding	3D Centric 1 1140 Hz/Px 1.1 ms 24 20 Normal Fast variable sinc 90 ON
Sequence Introduction Dimension Reordering Contrasts Bandwidth Echo spacing Turbo factor EPI factor RF pulse type Gradient mode refocussing type flip angle excit phase encoding Maxwell compensation	3D Centric 1 1140 Hz/Px 1.1 ms 24 20 Normal Fast variable sinc 90 ON Off single 0
Sequence Introduction Dimension Reordering Contrasts Bandwidth Echo spacing Turbo factor EPI factor RF pulse type Gradient mode refocussing type flip angle excit phase encoding Maxwell compensation ICE program	3D Centric 1 1140 Hz/Px 1.1 ms 24 20 Normal Fast variable sinc 90 ON Off single
Sequence Introduction Dimension Reordering Contrasts Bandwidth Echo spacing Turbo factor EPI factor RF pulse type Gradient mode refocussing type flip angle excit phase encoding Maxwell compensation ICE program prepscans excite duration refoc duration	3D Centric 1 1140 Hz/Px 1.1 ms 24 20 Normal Fast variable sinc 90 ON Off single 0 2560 2560
Sequence Introduction Dimension Reordering Contrasts Bandwidth Echo spacing Turbo factor EPI factor RF pulse type Gradient mode refocussing type flip angle excit phase encoding Maxwell compensation ICE program prepscans excite duration refoc duration excite BWTP	3D Centric 1 1140 Hz/Px 1.1 ms 24 20 Normal Fast variable sinc 90 ON Off single 0 2560
Sequence Introduction Dimension Reordering Contrasts Bandwidth Echo spacing Turbo factor EPI factor RF pulse type Gradient mode refocussing type flip angle excit phase encoding Maxwell compensation ICE program prepscans excite duration refoc duration excite BWTP refoc BWTP	3D Centric 1 1140 Hz/Px 1.1 ms 24 20 Normal Fast variable sinc 90 ON Off single 0 2560 2560 12.0 8.0
Sequence Introduction Dimension Reordering Contrasts Bandwidth Echo spacing Turbo factor EPI factor RF pulse type Gradient mode refocussing type flip angle excit phase encoding Maxwell compensation ICE program prepscans excite duration refoc duration excite BWTP refoc BWTP Variable Flip Angle 01	3D Centric 1 1140 Hz/Px 1.1 ms 24 20 Normal Fast variable sinc 90 ON Off single 0 2560 2560 12.0
Sequence Introduction Dimension Reordering Contrasts Bandwidth Echo spacing Turbo factor EPI factor RF pulse type Gradient mode refocussing type flip angle excit phase encoding Maxwell compensation ICE program prepscans excite duration refoc duration excite BWTP refoc BWTP Variable Flip Angle 01 Variable Flip Angle 02	3D Centric 1 1140 Hz/Px 1.1 ms 24 20 Normal Fast variable sinc 90 ON Off single 0 2560 2560 12.0 8.0
Sequence Introduction Dimension Reordering Contrasts Bandwidth Echo spacing Turbo factor EPI factor RF pulse type Gradient mode refocussing type flip angle excit phase encoding Maxwell compensation ICE program prepscans excite duration refoc duration excite BWTP Variable Flip Angle 01 Variable Flip Angle 02 Variable Flip Angle 03	3D Centric 1 1140 Hz/Px 1.1 ms 24 20 Normal Fast variable sinc 90 ON Off single 0 2560 2560 12.0 8.0 180
Sequence Introduction Dimension Reordering Contrasts Bandwidth Echo spacing Turbo factor EPI factor RF pulse type Gradient mode refocussing type flip angle excit phase encoding Maxwell compensation ICE program prepscans excite duration refoc duration excite BWTP refoc BWTP Variable Flip Angle 01 Variable Flip Angle 03 Variable Flip Angle 03 Variable Flip Angle 04	3D Centric 1 1140 Hz/Px 1.1 ms 24 20 Normal Fast variable sinc 90 ON Off single 0 2560 2560 12.0 8.0 180
Sequence Introduction Dimension Reordering Contrasts Bandwidth Echo spacing Turbo factor EPI factor RF pulse type Gradient mode refocussing type flip angle excit phase encoding Maxwell compensation ICE program prepscans excite duration refoc duration excite BWTP refoc BWTP Variable Flip Angle 01 Variable Flip Angle 03 Variable Flip Angle 04 Variable Flip Angle 05	3D Centric 1 1140 Hz/Px 1.1 ms 24 20 Normal Fast variable sinc 90 ON Off single 0 2560 2560 12.0 8.0 180 180
Sequence Introduction Dimension Reordering Contrasts Bandwidth Echo spacing Turbo factor EPI factor RF pulse type Gradient mode refocussing type flip angle excit phase encoding Maxwell compensation ICE program prepscans excite duration refoc duration excite BWTP refoc BWTP Variable Flip Angle 01 Variable Flip Angle 03 Variable Flip Angle 04 Variable Flip Angle 05 Variable Flip Angle 05 Variable Flip Angle 06	3D Centric 1 1140 Hz/Px 1.1 ms 24 20 Normal Fast variable sinc 90 ON Off single 0 2560 2560 12.0 8.0 180 180 180
Sequence Introduction Dimension Reordering Contrasts Bandwidth Echo spacing Turbo factor EPI factor RF pulse type Gradient mode refocussing type flip angle excit phase encoding Maxwell compensation ICE program prepscans excite duration refoc duration refoc BWTP Variable Flip Angle 01 Variable Flip Angle 02 Variable Flip Angle 03 Variable Flip Angle 04 Variable Flip Angle 05 Variable Flip Angle 06 Variable Flip Angle 06 Variable Flip Angle 07	3D Centric 1 1140 Hz/Px 1.1 ms 24 20 Normal Fast variable sinc 90 ON Off single 0 2560 2560 12.0 8.0 180 180 180 180 180 180 180 180
Sequence Introduction Dimension Reordering Contrasts Bandwidth Echo spacing Turbo factor EPI factor RF pulse type Gradient mode refocussing type flip angle excit phase encoding Maxwell compensation ICE program prepscans excite duration refoc duration excite BWTP refoc BWTP Variable Flip Angle 01 Variable Flip Angle 02 Variable Flip Angle 03 Variable Flip Angle 04 Variable Flip Angle 05 Variable Flip Angle 06 Variable Flip Angle 07 Variable Flip Angle 07 Variable Flip Angle 07 Variable Flip Angle 08	3D Centric 1 1140 Hz/Px 1.1 ms 24 20 Normal Fast variable sinc 90 ON Off single 0 2560 2560 12.0 8.0 180 180 180 180 180 180 180 180
Introduction Dimension Reordering Contrasts Bandwidth Echo spacing Turbo factor EPI factor RF pulse type Gradient mode refocussing type flip angle excit phase encoding Maxwell compensation ICE program prepscans excite duration refoc duration excite BWTP refoc BWTP Variable Flip Angle 01 Variable Flip Angle 02 Variable Flip Angle 03 Variable Flip Angle 04 Variable Flip Angle 05 Variable Flip Angle 06 Variable Flip Angle 07 Variable Flip Angle 07 Variable Flip Angle 08 Variable Flip Angle 08 Variable Flip Angle 09	3D Centric 1 1140 Hz/Px 1.1 ms 24 20 Normal Fast variable sinc 90 ON Off single 0 2560 2560 12.0 8.0 180 180 180 180 180 180 180 180 180 18
Sequence Introduction Dimension Reordering Contrasts Bandwidth Echo spacing Turbo factor EPI factor RF pulse type Gradient mode refocussing type flip angle excit phase encoding Maxwell compensation ICE program prepscans excite duration refoc duration excite BWTP refoc BWTP Variable Flip Angle 01 Variable Flip Angle 02 Variable Flip Angle 03 Variable Flip Angle 04 Variable Flip Angle 05 Variable Flip Angle 06 Variable Flip Angle 07 Variable Flip Angle 07 Variable Flip Angle 07 Variable Flip Angle 08	3D Centric 1 1140 Hz/Px 1.1 ms 24 20 Normal Fast variable sinc 90 ON Off single 0 2560 2560 12.0 8.0 180 180 180 180 180 180 180 180

Variable Flip Angle 12	180
Variable Flip Angle 13	180
Variable Flip Angle 14	180
Variable Flip Angle 15	180
Variable Flip Angle 16	180
Variable Flip Angle 17	180
Variable Flip Angle 18	180
Variable Flip Angle 19	180
Variable Flip Angle 20	180
Regular or CS	CS
actual ETL	10
Which areas?	Motor Cortex

\\USER\Feinberglab\Suhyung\GRASE w/ CS for STG\BP_AccVGRASE_36SL_1.0mm_EPI20 Voxel size: 1.0×1.0×1.0 mm Rel. SNR: 1.00

USER: BP_GRASE_SH

171:1:00	70 VOXCI 3120: 1:0X1:0X1:01	11111 1101. 01111. 1:00	DETA: DI _01010E_011
Properties		Pause after meas. 20	0.0 s
Prio Recon	Off	Pause after meas. 21	0.0 s
Before measurement	Oli	Pause after meas. 22	0.0 s
After measurement		Pause after meas. 23	0.0 s
Load to viewer	On	Pause after meas. 24	0.0 s
Inline movie	Off	Pause after meas. 25	0.0 s
	On	Pause after meas. 26	0.0 s
Auto store images	Off	Pause after meas. 27	0.0 s
Load to stamp segments	Off	Pause after meas. 28	0.0 s
Load images to graphic	Oil	Pause after meas. 29	0.0 s
segments	0"	Pause after meas. 30	0.0 s
Auto open inline display	Off	Pause after meas. 31	0.0 s
Start measurement without	On	Pause after meas. 32	0.0 s
further preparation	a	Pause after meas, 33	0.0 s
Wait for user to start	Off	Pause after meas. 34	0.0 s
Start measurements	single	Pause after meas, 35	0.0 s
Routine		Pause after meas. 36	0.0 s
Slab group 1		Pause after meas. 37	0.0 s
Slabs	1	Pause after meas. 38	0.0 s
Dist. factor	0 %	Pause after meas. 39	0.0 s
Position	Isocenter	Pause after meas. 40	0.0 s
		Pause after meas. 41	0.0 s
Orientation	Transversal	Pause after meas. 42	0.0 s
Phase enc. dir.	R >> L		
Rotation	90.00 deg	Pause after meas. 43 Pause after meas. 44	0.0 s
Phase oversampling	0 %		0.0 s
Slice oversampling	0.0 %	Pause after meas. 45	0.0 s
Slices per slab	36	Pause after meas. 46	0.0 s
FoV read	102.0 mm	Pause after meas. 47	0.0 s
FoV phase	35.3 %	Pause after meas. 48	0.0 s
Slice thickness	1.00 mm	Pause after meas. 49	0.0 s
TR	1500 ms	Pause after meas. 50	0.0 s
TE	32.08 ms	Pause after meas. 51	0.0 s
Averages	1	Pause after meas. 52	0.0 s
Concatenations	1	Pause after meas. 53	0.0 s
Filter	None	Pause after meas. 54	0.0 s
Coil elements	B4;M2,3;T1	Pause after meas. 55	0.0 s
Countract		Pause after meas. 56	0.0 s
Contrast	Niera	Pause after meas. 57	0.0 s
Magn. preparation	None	Pause after meas. 58	0.0 s
Flip angle	160 deg	Pause after meas. 59	0.0 s
Fat suppr.	Fat sat.	Multiple series	Off
Fat sat. mode	Strong	Resolution	
Averaging mode	Long term		400
Reconstruction	Magnitude	Base resolution	102
Measurements	60	Phase resolution	100 %
Pause after meas. 1	0.0 s	Slice resolution	100 %
Pause after meas. 2	0.0 s	Slice partial Fourier	Off
Pause after meas. 3	0.0 s	Interpolation	Off
Pause after meas. 4	0.0 s	PAT mode	None
Pause after meas. 5	0.0 s		
Pause after meas. 6	0.0 s	Prescan Normalize	Off
Pause after meas. 7	0.0 s 0.0 s	Raw filter	Off
		Coomotry	
Pause after meas. 8 Pause after meas. 9	0.0 s	Geometry	linta il a qua d
	0.0 s	Series	Interleaved
Pause after meas. 10	0.0 s	Sat. region 1	
Pause after meas. 11	0.0 s	Thickness	36 mm
Pause after meas. 12	0.0 s	Position	Isocenter
Pause after meas. 13	0.0 s	Orientation	Sagittal
Pause after meas. 14	0.0 s	Special sat.	None
Pause after meas. 15	0.0 s		
Pause after meas. 16	0.0 s	Table position	Н
Pause after meas. 17	0.0 s	Table position	0 mm
Pause after meas. 18	0.0 s	Inline Composing	Off
Pause after meas. 19	0.0 s		

System	
T1	On
M2	On
B4	On
M3	On
V32	Off
Positioning mode	REF
MSMA	S - C - T
Sagittal	R >> L
Coronal	A >> P
Transversal	F >> H
Save uncombined	Off
Coil Combine Mode	Adaptive Combine
AutoAlign	
Auto Coil Select	Default
Chim made	Ctandard
Shim mode	Standard
Adjust with body coil	Off
Confirm freq. adjustment	Off
Assume Silicone	Off
! Ref. amplitude 1H	220.000 V
Adjustment Tolerance	Auto
Adjust volume	
Position	Isocenter
Orientation	Transversal
Rotation	90.00 deg
A >> P	102 mm
R >> L	36 mm
F >> H	36 mm
Physio	
1st Signal/Mode	None
_	
Composing	
Sequence Introduction	0"
	Off 3D
Dimension	3D
Dimension Reordering	3D Centric
Dimension Reordering Contrasts	3D Centric 1
Dimension Reordering Contrasts Bandwidth	3D Centric 1 1140 Hz/Px
Dimension Reordering Contrasts	3D Centric 1
Dimension Reordering Contrasts Bandwidth	3D Centric 1 1140 Hz/Px
Dimension Reordering Contrasts Bandwidth Echo spacing	3D Centric 1 1140 Hz/Px 1.1 ms
Dimension Reordering Contrasts Bandwidth Echo spacing Turbo factor EPI factor	3D Centric 1 1140 Hz/Px 1.1 ms
Dimension Reordering Contrasts Bandwidth Echo spacing Turbo factor EPI factor RF pulse type	3D Centric 1 1140 Hz/Px 1.1 ms 36 20 Normal
Dimension Reordering Contrasts Bandwidth Echo spacing Turbo factor EPI factor RF pulse type Gradient mode	3D Centric 1 1140 Hz/Px 1.1 ms 36 20 Normal Fast
Dimension Reordering Contrasts Bandwidth Echo spacing Turbo factor EPI factor RF pulse type Gradient mode refocussing type	3D Centric 1 1140 Hz/Px 1.1 ms 36 20 Normal Fast variable sinc
Dimension Reordering Contrasts Bandwidth Echo spacing Turbo factor EPI factor RF pulse type Gradient mode refocussing type flip angle excit	3D Centric 1 1140 Hz/Px 1.1 ms 36 20 Normal Fast variable sinc 90
Dimension Reordering Contrasts Bandwidth Echo spacing Turbo factor EPI factor RF pulse type Gradient mode refocussing type flip angle excit phase encoding	3D Centric 1 1140 Hz/Px 1.1 ms 36 20 Normal Fast variable sinc 90 ON
Dimension Reordering Contrasts Bandwidth Echo spacing Turbo factor EPI factor RF pulse type Gradient mode refocussing type flip angle excit phase encoding Maxwell compensation	3D Centric 1 1140 Hz/Px 1.1 ms 36 20 Normal Fast variable sinc 90 ON Off
Dimension Reordering Contrasts Bandwidth Echo spacing Turbo factor EPI factor RF pulse type Gradient mode refocussing type flip angle excit phase encoding	3D Centric 1 1140 Hz/Px 1.1 ms 36 20 Normal Fast variable sinc 90 ON
Dimension Reordering Contrasts Bandwidth Echo spacing Turbo factor EPI factor RF pulse type Gradient mode refocussing type flip angle excit phase encoding Maxwell compensation	3D Centric 1 1140 Hz/Px 1.1 ms 36 20 Normal Fast variable sinc 90 ON Off
Dimension Reordering Contrasts Bandwidth Echo spacing Turbo factor EPI factor RF pulse type Gradient mode refocussing type flip angle excit phase encoding Maxwell compensation ICE program	3D Centric 1 1140 Hz/Px 1.1 ms 36 20 Normal Fast variable sinc 90 ON Off single
Dimension Reordering Contrasts Bandwidth Echo spacing Turbo factor EPI factor RF pulse type Gradient mode refocussing type flip angle excit phase encoding Maxwell compensation ICE program prepscans	3D Centric 1 1140 Hz/Px 1.1 ms 36 20 Normal Fast variable sinc 90 ON Off single 0
Dimension Reordering Contrasts Bandwidth Echo spacing Turbo factor EPI factor RF pulse type Gradient mode refocussing type flip angle excit phase encoding Maxwell compensation ICE program prepscans excite duration	3D Centric 1 1140 Hz/Px 1.1 ms 36 20 Normal Fast variable sinc 90 ON Off single 0 2560
Dimension Reordering Contrasts Bandwidth Echo spacing Turbo factor EPI factor RF pulse type Gradient mode refocussing type flip angle excit phase encoding Maxwell compensation ICE program prepscans excite duration refoc duration	3D Centric 1 1140 Hz/Px 1.1 ms 36 20 Normal Fast variable sinc 90 ON Off single 0 2560 3840
Dimension Reordering Contrasts Bandwidth Echo spacing Turbo factor EPI factor RF pulse type Gradient mode refocussing type flip angle excit phase encoding Maxwell compensation ICE program prepscans excite duration refoc duration excite BWTP	3D Centric 1 1140 Hz/Px 1.1 ms 36 20 Normal Fast variable sinc 90 ON Off single 0 2560 3840 12.0
Dimension Reordering Contrasts Bandwidth Echo spacing Turbo factor EPI factor RF pulse type Gradient mode refocussing type flip angle excit phase encoding Maxwell compensation ICE program prepscans excite duration refoc duration excite BWTP refoc BWTP	3D Centric 1 1140 Hz/Px 1.1 ms 36 20 Normal Fast variable sinc 90 ON Off single 0 2560 3840 12.0 8.0
Dimension Reordering Contrasts Bandwidth Echo spacing Turbo factor EPI factor RF pulse type Gradient mode refocussing type flip angle excit phase encoding Maxwell compensation ICE program prepscans excite duration refoc duration excite BWTP refoc BWTP Variable Flip Angle 01 Variable Flip Angle 02	3D Centric 1 1140 Hz/Px 1.1 ms 36 20 Normal Fast variable sinc 90 ON Off single 0 2560 3840 12.0 8.0 180
Dimension Reordering Contrasts Bandwidth Echo spacing Turbo factor EPI factor RF pulse type Gradient mode refocussing type flip angle excit phase encoding Maxwell compensation ICE program prepscans excite duration refoc duration excite BWTP refoc BWTP Variable Flip Angle 01 Variable Flip Angle 02 Variable Flip Angle 03	3D Centric 1 1140 Hz/Px 1.1 ms 36 20 Normal Fast variable sinc 90 ON Off single 0 2560 3840 12.0 8.0 180 180
Dimension Reordering Contrasts Bandwidth Echo spacing Turbo factor EPI factor RF pulse type Gradient mode refocussing type flip angle excit phase encoding Maxwell compensation ICE program prepscans excite duration refoc duration excite BWTP refoc BWTP Variable Flip Angle 01 Variable Flip Angle 02 Variable Flip Angle 03 Variable Flip Angle 04	3D Centric 1 1140 Hz/Px 1.1 ms 36 20 Normal Fast variable sinc 90 ON Off single 0 2560 3840 12.0 8.0 180 180 180
Dimension Reordering Contrasts Bandwidth Echo spacing Turbo factor EPI factor RF pulse type Gradient mode refocussing type flip angle excit phase encoding Maxwell compensation ICE program prepscans excite duration refoc duration excite BWTP refoc BWTP Variable Flip Angle 01 Variable Flip Angle 02 Variable Flip Angle 03 Variable Flip Angle 04 Variable Flip Angle 05	3D Centric 1 1140 Hz/Px 1.1 ms 36 20 Normal Fast variable sinc 90 ON Off single 0 2560 3840 12.0 8.0 180 180 180 180 180
Dimension Reordering Contrasts Bandwidth Echo spacing Turbo factor EPI factor RF pulse type Gradient mode refocussing type flip angle excit phase encoding Maxwell compensation ICE program prepscans excite duration refoc duration excite BWTP refoc BWTP Variable Flip Angle 01 Variable Flip Angle 02 Variable Flip Angle 03 Variable Flip Angle 04 Variable Flip Angle 05 Variable Flip Angle 05 Variable Flip Angle 06	3D Centric 1 1140 Hz/Px 1.1 ms 36 20 Normal Fast variable sinc 90 ON Off single 0 2560 3840 12.0 8.0 180 180 180 180 180
Dimension Reordering Contrasts Bandwidth Echo spacing Turbo factor EPI factor RF pulse type Gradient mode refocussing type flip angle excit phase encoding Maxwell compensation ICE program prepscans excite duration refoc duration excite BWTP refoc BWTP Variable Flip Angle 01 Variable Flip Angle 02 Variable Flip Angle 03 Variable Flip Angle 04 Variable Flip Angle 05 Variable Flip Angle 06 Variable Flip Angle 06 Variable Flip Angle 07	3D Centric 1 1140 Hz/Px 1.1 ms 36 20 Normal Fast variable sinc 90 ON Off single 0 2560 3840 12.0 8.0 180 180 180 180 180 180 180 180
Dimension Reordering Contrasts Bandwidth Echo spacing Turbo factor EPI factor RF pulse type Gradient mode refocussing type flip angle excit phase encoding Maxwell compensation ICE program prepscans excite duration refoc duration excite BWTP refoc BWTP Variable Flip Angle 01 Variable Flip Angle 02 Variable Flip Angle 03 Variable Flip Angle 04 Variable Flip Angle 05 Variable Flip Angle 06 Variable Flip Angle 07 Variable Flip Angle 07 Variable Flip Angle 07 Variable Flip Angle 08	3D Centric 1 1140 Hz/Px 1.1 ms 36 20 Normal Fast variable sinc 90 ON Off single 0 2560 3840 12.0 8.0 180 180 180 180 180 180 180 180 180 18
Dimension Reordering Contrasts Bandwidth Echo spacing Turbo factor EPI factor RF pulse type Gradient mode refocussing type flip angle excit phase encoding Maxwell compensation ICE program prepscans excite duration refoc duration excite BWTP refoc BWTP Variable Flip Angle 01 Variable Flip Angle 02 Variable Flip Angle 03 Variable Flip Angle 04 Variable Flip Angle 05 Variable Flip Angle 05 Variable Flip Angle 07 Variable Flip Angle 07 Variable Flip Angle 08 Variable Flip Angle 08 Variable Flip Angle 08 Variable Flip Angle 09	3D Centric 1 1140 Hz/Px 1.1 ms 36 20 Normal Fast variable sinc 90 ON Off single 0 2560 3840 12.0 8.0 180 180 180 180 180 180 180 180 180 18
Dimension Reordering Contrasts Bandwidth Echo spacing Turbo factor EPI factor RF pulse type Gradient mode refocussing type flip angle excit phase encoding Maxwell compensation ICE program prepscans excite duration refoc duration excite BWTP refoc BWTP Variable Flip Angle 01 Variable Flip Angle 02 Variable Flip Angle 03 Variable Flip Angle 04 Variable Flip Angle 05 Variable Flip Angle 06 Variable Flip Angle 07 Variable Flip Angle 07 Variable Flip Angle 07 Variable Flip Angle 08	3D Centric 1 1140 Hz/Px 1.1 ms 36 20 Normal Fast variable sinc 90 ON Off single 0 2560 3840 12.0 8.0 180 180 180 180 180 180 180 180 180 18

Variable Flip Angle 12	180
Variable Flip Angle 13	180
Variable Flip Angle 14	180
Variable Flip Angle 15	180
Variable Flip Angle 16	180
Variable Flip Angle 17	180
Variable Flip Angle 18	180
Variable Flip Angle 19	180
Variable Flip Angle 20	180
Regular or CS	CS
actual ETL	14
Which areas?	Motor Cortex

\\USER\Feinberglab\Suhyung\GRASE w/ CS for STG\BP_AccVGRASE_36SL_0.8mm

USER: BP_GRASE_SH

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

TA: 1:30

		Pause after meas, 20	0.0 s
Properties		Pause after meas. 21	0.0 s
Prio Recon	Off	Pause after meas. 22	0.0 s
Before measurement			
After measurement		Pause after meas. 23	0.0 s
Load to viewer	On	Pause after meas. 24	0.0 s
Inline movie	Off	Pause after meas. 25	0.0 s
Auto store images	On	Pause after meas. 26	0.0 s
<u>o</u>	Off	Pause after meas. 27	0.0 s
Load to stamp segments	Off	Pause after meas. 28	0.0 s
Load images to graphic	Oli	Pause after meas. 29	0.0 s
segments	•	Pause after meas. 30	0.0 s
Auto open inline display	Off	Pause after meas, 31	0.0 s
Start measurement without	On	Pause after meas, 32	0.0 s
further preparation		Pause after meas. 33	0.0 s
Wait for user to start	Off	Pause after meas. 34	0.0 s
Start measurements	single	Pause after meas. 35	0.0 s
	_		
Routine		Pause after meas. 36	0.0 s
Slab group 1		Pause after meas. 37	0.0 s
Slabs	1	Pause after meas. 38	0.0 s
Dist. factor	0 %	Pause after meas. 39	0.0 s
Position	Isocenter	Pause after meas. 40	0.0 s
Orientation	Transversal	Pause after meas. 41	0.0 s
Phase enc. dir.	R >> L	Pause after meas, 42	0.0 s
Rotation	90.00 deg	Pause after meas, 43	0.0 s
Phase oversampling	0 %	Pause after meas. 44	0.0 s
		Pause after meas. 45	0.0 s
Slice oversampling	0.0 %	Pause after meas. 46	0.0 s
Slices per slab	36		
FoV read	89.6 mm	Pause after meas. 47	0.0 s
FoV phase	25.0 %	Pause after meas. 48	0.0 s
Slice thickness	0.80 mm	Pause after meas. 49	0.0 s
TR	1500 ms	Pause after meas. 50	0.0 s
TE	22.82 ms	Pause after meas. 51	0.0 s
Averages	1	Pause after meas. 52	0.0 s
Concatenations	1	Pause after meas, 53	0.0 s
Filter	None	Pause after meas, 54	0.0 s
Coil elements	B4;M2,3;T1	Pause after meas. 55	0.0 s
Con elements	D4,IVIZ,3,1 1	Pause after meas. 56	0.0 s
Contrast		Pause after meas. 57	
Magn. preparation	None		0.0 s
Flip angle	180 deg	Pause after meas. 58	0.0 s
Fat suppr.	Fat sat.	Pause after meas. 59	0.0 s
Fat sat. mode	Strong	Multiple series	Off
rai sai. mode	Sirving	····· Resolution	
Averaging mode	Long term		112
Reconstruction	Magnitude	Base resolution	
Measurements	60	Phase resolution	100 %
Pause after meas. 1	0.0 s	Slice resolution	100 %
Pause after meas. 2		Slice partial Fourier	Off
	0.0 s	Interpolation	Off
Pause after meas. 3	0.0 s	PAT mode	None
Pause after meas. 4	0.0 s	PAT mode	None
Pause after meas. 5	0.0 s	Prescan Normalize	Off
Pause after meas. 6	0.0 s	Raw filter	Off
Pause after meas. 7	0.0 s	raw inter	3 11
Pause after meas. 8	0.0 s	Geometry	
Pause after meas. 9	0.0 s	Series	Interleaved
Pause after meas. 10	0.0 s		
Pause after meas. 11	0.0 s	Sat. region 1	
Pause after meas. 12	0.0 s 0.0 s	Thickness	22 mm
		Position	Isocenter
Pause after meas. 13	0.0 s	Orientation	Sagittal
Pause after meas. 14	0.0 s	Special sat.	None
Pause after meas. 15	0.0 s		
Pause after meas. 16	0.0 s	Table position	Н
Pause after meas. 17	0.0 s	Table position	0 mm
Pause after meas. 18	0.0 s	Inline Composing	Off
Pause after meas. 19	0.0 s	' -	
i			

System	
T1	On
M2	On
B4	On
M3	On
V32	Off
Positioning mode	REF
MSMA	S - C - T
Sagittal	R >> L
Coronal	A >> P
Transversal	F >> H
Save uncombined	Off
Coil Combine Mode	Adaptive Combine
AutoAlign	
Auto Coil Select	Default
Shim mode	Standard
Adjust with body coil	Off
Confirm freq. adjustment	Off
Assume Silicone	Off
! Ref. amplitude 1H	220.000 V
Adjustment Tolerance	Auto
Adjust volume	
Position	Isocenter
Orientation	Transversal
Rotation	90.00 deg
A >> P	90 mm
R >> L	23 mm
F >> H	29 mm
1 22 11	20 111111
Physio	
1st Signal/Mode	None
Composing	
<u> </u>	
Sequence	
Sequence Introduction	Off
Introduction	Off 3D
Introduction Dimension	_
Introduction	3D
Introduction Dimension Reordering Contrasts	3D Centric
Introduction Dimension Reordering Contrasts Bandwidth	3D Centric 1 1144 Hz/Px
Introduction Dimension Reordering Contrasts	3D Centric 1
Introduction Dimension Reordering Contrasts Bandwidth	3D Centric 1 1144 Hz/Px 1.2 ms
Introduction Dimension Reordering Contrasts Bandwidth Echo spacing	3D Centric 1 1144 Hz/Px 1.2 ms
Introduction Dimension Reordering Contrasts Bandwidth Echo spacing Turbo factor	3D Centric 1 1144 Hz/Px 1.2 ms
Introduction Dimension Reordering Contrasts Bandwidth Echo spacing Turbo factor EPI factor	3D Centric 1 1144 Hz/Px 1.2 ms
Introduction Dimension Reordering Contrasts Bandwidth Echo spacing Turbo factor EPI factor RF pulse type Gradient mode	3D Centric 1 1144 Hz/Px 1.2 ms 36 12 Normal Fast
Introduction Dimension Reordering Contrasts Bandwidth Echo spacing Turbo factor EPI factor RF pulse type Gradient mode refocussing type	3D Centric 1 1144 Hz/Px 1.2 ms 36 12 Normal Fast variable sinc
Introduction Dimension Reordering Contrasts Bandwidth Echo spacing Turbo factor EPI factor RF pulse type Gradient mode refocussing type flip angle excit	3D Centric 1 1144 Hz/Px 1.2 ms 36 12 Normal Fast variable sinc 90
Introduction Dimension Reordering Contrasts Bandwidth Echo spacing Turbo factor EPI factor RF pulse type Gradient mode refocussing type flip angle excit phase encoding	3D Centric 1 1144 Hz/Px 1.2 ms 36 12 Normal Fast variable sinc 90 ON
Introduction Dimension Reordering Contrasts Bandwidth Echo spacing Turbo factor EPI factor RF pulse type Gradient mode refocussing type flip angle excit phase encoding Maxwell compensation	3D Centric 1 1144 Hz/Px 1.2 ms 36 12 Normal Fast variable sinc 90 ON Off
Introduction Dimension Reordering Contrasts Bandwidth Echo spacing Turbo factor EPI factor RF pulse type Gradient mode refocussing type flip angle excit phase encoding	3D Centric 1 1144 Hz/Px 1.2 ms 36 12 Normal Fast variable sinc 90 ON
Introduction Dimension Reordering Contrasts Bandwidth Echo spacing Turbo factor EPI factor RF pulse type Gradient mode refocussing type flip angle excit phase encoding Maxwell compensation	3D Centric 1 1144 Hz/Px 1.2 ms 36 12 Normal Fast variable sinc 90 ON Off
Introduction Dimension Reordering Contrasts Bandwidth Echo spacing Turbo factor EPI factor RF pulse type Gradient mode refocussing type flip angle excit phase encoding Maxwell compensation ICE program	3D Centric 1 1144 Hz/Px 1.2 ms 36 12 Normal Fast variable sinc 90 ON Off single
Introduction Dimension Reordering Contrasts Bandwidth Echo spacing Turbo factor EPI factor RF pulse type Gradient mode refocussing type flip angle excit phase encoding Maxwell compensation ICE program prepscans	3D Centric 1 1144 Hz/Px 1.2 ms 36 12 Normal Fast variable sinc 90 ON Off single 0
Introduction Dimension Reordering Contrasts Bandwidth Echo spacing Turbo factor EPI factor RF pulse type Gradient mode refocussing type flip angle excit phase encoding Maxwell compensation ICE program prepscans excite duration	3D Centric 1 1144 Hz/Px 1.2 ms 36 12 Normal Fast variable sinc 90 ON Off single 0 2560
Introduction Dimension Reordering Contrasts Bandwidth Echo spacing Turbo factor EPI factor RF pulse type Gradient mode refocussing type flip angle excit phase encoding Maxwell compensation ICE program prepscans excite duration refoc duration excite BWTP	3D Centric 1 1144 Hz/Px 1.2 ms 36 12 Normal Fast variable sinc 90 ON Off single 0 2560 2560 12.0
Introduction Dimension Reordering Contrasts Bandwidth Echo spacing Turbo factor EPI factor RF pulse type Gradient mode refocussing type flip angle excit phase encoding Maxwell compensation ICE program prepscans excite duration refoc duration excite BWTP refoc BWTP	3D Centric 1 1144 Hz/Px 1.2 ms 36 12 Normal Fast variable sinc 90 ON Off single 0 2560 2560 12.0 8.0
Introduction Dimension Reordering Contrasts Bandwidth Echo spacing Turbo factor EPI factor RF pulse type Gradient mode refocussing type flip angle excit phase encoding Maxwell compensation ICE program prepscans excite duration refoc duration excite BWTP refoc BWTP Variable Flip Angle 01	3D Centric 1 1144 Hz/Px 1.2 ms 36 12 Normal Fast variable sinc 90 ON Off single 0 2560 2560 12.0 8.0 83
Introduction Dimension Reordering Contrasts Bandwidth Echo spacing Turbo factor EPI factor RF pulse type Gradient mode refocussing type flip angle excit phase encoding Maxwell compensation ICE program prepscans excite duration refoc duration excite BWTP refoc BWTP Variable Flip Angle 01 Variable Flip Angle 02	3D Centric 1 1144 Hz/Px 1.2 ms 36 12 Normal Fast variable sinc 90 ON Off single 0 2560 2560 12.0 8.0 83 46
Introduction Dimension Reordering Contrasts Bandwidth Echo spacing Turbo factor EPI factor RF pulse type Gradient mode refocussing type flip angle excit phase encoding Maxwell compensation ICE program prepscans excite duration refoc duration excite BWTP refoc BWTP Variable Flip Angle 01 Variable Flip Angle 02 Variable Flip Angle 03	3D Centric 1 1144 Hz/Px 1.2 ms 36 12 Normal Fast variable sinc 90 ON Off single 0 2560 2560 12.0 8.0 83 46 42
Introduction Dimension Reordering Contrasts Bandwidth Echo spacing Turbo factor EPI factor RF pulse type Gradient mode refocussing type flip angle excit phase encoding Maxwell compensation ICE program prepscans excite duration refoc duration excite BWTP refoc BWTP Variable Flip Angle 01 Variable Flip Angle 02 Variable Flip Angle 03 Variable Flip Angle 04	3D Centric 1 1144 Hz/Px 1.2 ms 36 12 Normal Fast variable sinc 90 ON Off single 0 2560 2560 12.0 8.0 83 46 42 40
Introduction Dimension Reordering Contrasts Bandwidth Echo spacing Turbo factor EPI factor RF pulse type Gradient mode refocussing type flip angle excit phase encoding Maxwell compensation ICE program prepscans excite duration refoc duration excite BWTP refoc BWTP Variable Flip Angle 01 Variable Flip Angle 02 Variable Flip Angle 03 Variable Flip Angle 04 Variable Flip Angle 05	3D Centric 1 1144 Hz/Px 1.2 ms 36 12 Normal Fast variable sinc 90 ON Off single 0 2560 2560 12.0 8.0 83 46 42 40 41
Introduction Dimension Reordering Contrasts Bandwidth Echo spacing Turbo factor EPI factor RF pulse type Gradient mode refocussing type flip angle excit phase encoding Maxwell compensation ICE program prepscans excite duration refoc duration refoc duration excite BWTP refoc BWTP Variable Flip Angle 01 Variable Flip Angle 02 Variable Flip Angle 03 Variable Flip Angle 04 Variable Flip Angle 05 Variable Flip Angle 05 Variable Flip Angle 06	3D Centric 1 1144 Hz/Px 1.2 ms 36 12 Normal Fast variable sinc 90 ON Off single 0 2560 2560 12.0 8.0 83 46 42 40 41 43
Dimension Reordering Contrasts Bandwidth Echo spacing Turbo factor EPI factor RF pulse type Gradient mode refocussing type flip angle excit phase encoding Maxwell compensation ICE program prepscans excite duration refoc duration excite BWTP refoc BWTP Variable Flip Angle 01 Variable Flip Angle 02 Variable Flip Angle 03 Variable Flip Angle 04 Variable Flip Angle 05 Variable Flip Angle 06 Variable Flip Angle 06 Variable Flip Angle 06 Variable Flip Angle 07	3D Centric 1 1144 Hz/Px 1.2 ms 36 12 Normal Fast variable sinc 90 ON Off single 0 2560 2560 12.0 8.0 83 46 42 40 41 43 46
Introduction Dimension Reordering Contrasts Bandwidth Echo spacing Turbo factor EPI factor RF pulse type Gradient mode refocussing type flip angle excit phase encoding Maxwell compensation ICE program prepscans excite duration refoc duration refoc duration excite BWTP Variable Flip Angle 01 Variable Flip Angle 02 Variable Flip Angle 03 Variable Flip Angle 04 Variable Flip Angle 05 Variable Flip Angle 06 Variable Flip Angle 07 Variable Flip Angle 07 Variable Flip Angle 07 Variable Flip Angle 08	3D Centric 1 1144 Hz/Px 1.2 ms 36 12 Normal Fast variable sinc 90 ON Off single 0 2560 2560 12.0 8.0 83 46 42 40 41 43 46 50
Introduction Dimension Reordering Contrasts Bandwidth Echo spacing Turbo factor EPI factor RF pulse type Gradient mode refocussing type flip angle excit phase encoding Maxwell compensation ICE program prepscans excite duration refoc duration excite BWTP Variable Flip Angle 01 Variable Flip Angle 02 Variable Flip Angle 03 Variable Flip Angle 04 Variable Flip Angle 05 Variable Flip Angle 06 Variable Flip Angle 07 Variable Flip Angle 07 Variable Flip Angle 08 Variable Flip Angle 08 Variable Flip Angle 08 Variable Flip Angle 08	3D Centric 1 1144 Hz/Px 1.2 ms 36 12 Normal Fast variable sinc 90 ON Off single 0 2560 2560 12.0 8.0 83 46 42 40 41 43 46 50 54
Introduction Dimension Reordering Contrasts Bandwidth Echo spacing Turbo factor EPI factor RF pulse type Gradient mode refocussing type flip angle excit phase encoding Maxwell compensation ICE program prepscans excite duration refoc duration excite BWTP refoc BWTP Variable Flip Angle 01 Variable Flip Angle 02 Variable Flip Angle 03 Variable Flip Angle 04 Variable Flip Angle 05 Variable Flip Angle 06 Variable Flip Angle 07 Variable Flip Angle 07 Variable Flip Angle 07 Variable Flip Angle 07	3D Centric 1 1144 Hz/Px 1.2 ms 36 12 Normal Fast variable sinc 90 ON Off single 0 2560 2560 12.0 8.0 83 46 42 40 41 43 46 50

Variable Flip Angle 12	74
Variable Flip Angle 13	89
Variable Flip Angle 14	135
Variable Flip Angle 15	180
Variable Flip Angle 16	180
Variable Flip Angle 17	180
Variable Flip Angle 18	180
Variable Flip Angle 19	180
Variable Flip Angle 20	180
Regular or CS	CS
actual ETL	14
Which areas?	Motor Cortex

\\USER\Feinberglab\Suhyung\GRASE w/ CS for STG\BP_AccCGRASE_24SL_1.0mm_TE23ms TA: 9:54 PAT: Off Voxel size: 1.0×1.0×1.0 mm Rel. SNR: 1.00 USER: BP_GRASE_SH

Properties		Orientation Special sat.	Sagittal None
Prio Recon	Off		
Before measurement		Table position	H
After measurement		Table position	0 mm
Load to viewer	On O"	Inline Composing	Off
Inline movie	Off	System	
Auto store images	On	T1	On
Load to stamp segments	Off	M2	On
Load images to graphic	Off	B4	On
segments		M3	On
Auto open inline display	Off	V32	Off
Start measurement without	On		
further preparation		Positioning mode	REF
Wait for user to start	Off	MSMA	S - C - T
Start measurements	single	Sagittal	R >> L
Routine		Coronal	A >> P
		Transversal	F >> H
Slab group 1 Slabs	1	Save uncombined	Off
Dist. factor	1 0 %	Coil Combine Mode	Adaptive Combine
		AutoAlign	·
Position	Isocenter	Auto Coil Select	Default
Orientation	Transversal		O
Phase enc. dir.	R >> L	Shim mode	Standard
Rotation	90.00 deg	Adjust with body coil	Off
Phase oversampling	0 %	Confirm freq. adjustment	Off
Slice oversampling	0.0 %	Assume Silicone	Off
Slices per slab	24	! Ref. amplitude 1H	220.000 V
FoV read	102.0 mm	Adjustment Tolerance	Auto
FoV phase	35.3 %	Adjust volume	
Slice thickness	1.00 mm	Position	Isocenter
TR	1500 ms	Orientation	Transversal
TE	23.12 ms	Rotation	90.00 deg
Averages	1	A >> P	102 mm
Concatenations	1	R >> L	36 mm
Filter	None	F >> H	24 mm
Coil elements	B4;M2,3;T1	Physio	
Contrast		1st Signal/Mode	None
Magn. preparation	None	= '	None
Flip angle	160 deg	Composing	
Fat suppr.	Fat sat.	Sequence	
Fat sat. mode	Strong		Off
		Introduction Dimension	Off 3D
Averaging mode	Long term	Reordering	Centric
Reconstruction	Magnitude	Contrasts	1
Measurements	396	Bandwidth	1140 Hz/Px
Pause after meas.	0.0 s	Echo spacing	1.1 ms
Multiple series	Off		1.1 1115
Resolution		Turbo factor	24
Base resolution	102	EPI factor	12
Phase resolution	100 %	RF pulse type	Normal
Slice resolution	100 %	Gradient mode	Fast
Slice partial Fourier	Off	referencing type	sinc 2560
Interpolation	Off	refocussing type	sinc 2560 90
		flip angle excit	
PAT mode	None	phase encoding	ON O#
Dragge Normaliza	O#	Maxwell compensation	Off
Prescan Normalize	Off Off	ICE program	single
Raw filter	OII	prepscans	0
Geometry		excite duration	2560
Series	Interleaved	refoc duration	3840
		excite BWTP	12.0
Sat. region 1		refoc BWTP	8.0
Thickness	36 mm	Variable Flip Angle 01	180
Position	Isocenter	Variable Flip Angle 02	180

Variable Flip Angle 03	180
Variable Flip Angle 04	180
Variable Flip Angle 05	180
Variable Flip Angle 06	180
Variable Flip Angle 07	180
Variable Flip Angle 08	180
Variable Flip Angle 09	180
Variable Flip Angle 10	180
Variable Flip Angle 11	180
Variable Flip Angle 12	180
Variable Flip Angle 13	180
Variable Flip Angle 14	180
Variable Flip Angle 15	180
Variable Flip Angle 16	180
Variable Flip Angle 17	180
Variable Flip Angle 18	180
Variable Flip Angle 19	180
Variable Flip Angle 20	180
Regular or CS	CS
actual ETL	10
Which areas?	STG

\\USER\Feinberglab\Suhyung\GRASE w/ CS for STG\BP_AccVGRASE_24SL_1.0mm_TE23ms TA: 9:54 PAT: Off Voxel size: 1.0×1.0×1.0 mm Rel. SNR: 1.00 USER: BP_GRASE_SH

Properties		Orientation Special sat.	Sagittal None
Prio Recon	Off		
Before measurement		Table position	H
After measurement		Table position	0 mm
Load to viewer	On	Inline Composing	Off
Inline movie	Off	System	
Auto store images	On	T1	On
Load to stamp segments	Off	M2	On
Load images to graphic	Off	B4	On
segments		M3	On
Auto open inline display	Off	V32	Off
Start measurement without	On		
further preparation		Positioning mode	REF
Wait for user to start	Off	MSMA	S - C - T
Start measurements	single	Sagittal	R >> L
Routine		Coronal	A >> P
Slab group 1		- Transversal	F >> H
Slabs	1	Save uncombined	Off
Dist. factor	0 %	Coil Combine Mode	Adaptive Combine
Position	Isocenter	AutoAlign	
Orientation	Transversal	Auto Coil Select	Default
Phase enc. dir.	R >> L	Shim mode	Standard
Rotation	90.00 deg	Adjust with body coil	Off
Phase oversampling	0 %	Confirm freq. adjustment	Off
Slice oversampling	0.0 %	Assume Silicone	Off
Slices per slab	24	! Ref. amplitude 1H	220.000 V
FoV read	102.0 mm	Adjustment Tolerance	Auto
FoV phase	35.3 %	Adjust volume	Auto
Slice thickness	1.00 mm	Position	Isocenter
TR	1500 ms	Orientation	Transversal
TE	23.12 ms	Rotation	90.00 deg
Averages	1	A >> P	102 mm
Concatenations	1	R >> L	36 mm
Filter	None	F >> H	24 mm
Coil elements	B4;M2,3;T1	Г >> П	24 111111
Oon cicinents	D+,W2,0,11	Physio	
Contrast		1st Signal/Mode	None
Magn. preparation	None	Composing	
Flip angle	160 deg	Composing	
Fat suppr.	Fat sat.	Sequence	
Fat sat. mode	Strong	Introduction	Off
Averaging mode	Long term	Dimension	3D
Reconstruction	Magnitude	Reordering	Centric
Measurements	396	Contrasts	1
Pause after meas.	0.0 s	Bandwidth	1140 Hz/Px
Multiple series	Off	Echo spacing	1.1 ms
1	.	Turbo factor	24
Resolution		- EPI factor	12
Base resolution	102	RF pulse type	Normal
Phase resolution	100 %	Gradient mode	Fast
Slice resolution	100 %		ı aət
Slice partial Fourier	Off	refocussing type	variable sinc
Interpolation	Off	flip angle excit	90
PAT mode	None	phase encoding	ON
		Maxwell compensation	Off
Prescan Normalize	Off	ICE program	single
Raw filter	Off	prepscans	0
Geometry		excite duration	2560
Geometry Series	Interleaved	refoc duration	3840
361165	IIIIEIIEAVEU	excite BWTP	12.0
Sat. region 1		refoc BWTP	8.0
Thickness	36 mm	Variable Flip Angle 01	180
Position	Isocenter	Variable Flip Angle 02	180
1 0011011			

Variable Flip Angle 03	180
Variable Flip Angle 04	180
Variable Flip Angle 05	180
Variable Flip Angle 06	180
Variable Flip Angle 07	180
Variable Flip Angle 08	180
Variable Flip Angle 09	180
Variable Flip Angle 10	180
Variable Flip Angle 11	180
Variable Flip Angle 12	180
Variable Flip Angle 13	180
Variable Flip Angle 14	180
Variable Flip Angle 15	180
Variable Flip Angle 16	180
Variable Flip Angle 17	180
Variable Flip Angle 18	180
Variable Flip Angle 19	180
Variable Flip Angle 20	180
Regular or CS	CS
actual ETL	10
Which areas?	STG

\\USER\Feinberglab\Suhyung\GRASE w/ CS for STG\BP_AccVGRASE_24SL_1.0mm_TE21ms TA: 9:54 PAT: Off Voxel size: 1.0×1.0×1.0 mm Rel. SNR: 1.00 USER: BP_GRASE_SH

Properties		Orientation Special sat.	Sagittal None
Prio Recon	Off		
Before measurement		Table position	H
After measurement		Table position	0 mm
Load to viewer	On	Inline Composing	Off
Inline movie	Off	System	
Auto store images	On	T1	On
Load to stamp segments	Off	M2	On
Load images to graphic	Off	B4	On
segments		M3	On
Auto open inline display	Off	V32	Off
Start measurement without	On		
further preparation		Positioning mode	REF
Wait for user to start	Off	MSMA	S - C - T
Start measurements	single	Sagittal	R >> L
Routine		Coronal	A >> P
Slab group 1		Transversal	F >> H
Slabs	1	Save uncombined	Off
Dist. factor	0 %	Coil Combine Mode	Adaptive Combine
Position	Isocenter	AutoAlign	
Orientation	Transversal	Auto Coil Select	Default
Phase enc. dir.	R >> L	Shim mode	Standard
Rotation	90.00 deg	Adjust with body coil	Off
Phase oversampling	0 %	Confirm freq. adjustment	Off
Slice oversampling	0.0 %	Assume Silicone	Off
Slices per slab	24	! Ref. amplitude 1H	220.000 V
FoV read	102.0 mm	Adjustment Tolerance	Auto
FoV phase	35.3 %	Adjust volume	Auto
Slice thickness	1.00 mm	Position	Isocenter
TR	1500 ms	Orientation	Transversal
TE	21.84 ms	Rotation	90.00 deg
Averages	1	A >> P	102 mm
Concatenations	1	R >> L	36 mm
Filter	None	F >> H	24 mm
Coil elements	B4;M2,3;T1		24 111111
Con ciements	D+,W2,0,11	Physio	
Contrast		1st Signal/Mode	None
Magn. preparation	None	Composing	
Flip angle	160 deg	Composing	
Fat suppr.	Fat sat.	Sequence	
Fat sat. mode	Strong	Introduction	Off
Averaging mode	Long term	Dimension	3D
Reconstruction	Magnitude	Reordering	Centric
Measurements	396	Contrasts	1
Pause after meas.	0.0 s	Bandwidth	1140 Hz/Px
Multiple series	Off	Echo spacing	1.1 ms
1		Turbo factor	24
Resolution		EPI factor	12
Base resolution	102	RF pulse type	Normal
Phase resolution	100 %	Gradient mode	Fast
Slice resolution	100 %		1 USL
Slice partial Fourier	Off	refocussing type	variable sinc
Interpolation	Off	flip angle excit	90
PAT mode	None	phase encoding	ON
		Maxwell compensation	Off
Prescan Normalize	Off	ICE program	single
Raw filter	Off	prepscans	0
Geometry		excite duration	2560
Series	Interleaved	refoc duration	2560
Jelies	IIIIGIIGAVGU	excite BWTP	12.0
Sat. region 1		refoc BWTP	8.0
Thickness	36 mm	Variable Flip Angle 01	180
Position	Isocenter	Variable Flip Angle 02	180
i .		1	

Variable Flip Angle 03	180
Variable Flip Angle 04	180
Variable Flip Angle 05	180
Variable Flip Angle 06	180
Variable Flip Angle 07	180
Variable Flip Angle 08	180
Variable Flip Angle 09	180
Variable Flip Angle 10	180
Variable Flip Angle 11	180
Variable Flip Angle 12	180
Variable Flip Angle 13	180
Variable Flip Angle 14	180
Variable Flip Angle 15	180
Variable Flip Angle 16	180
Variable Flip Angle 17	180
Variable Flip Angle 18	180
Variable Flip Angle 19	180
Variable Flip Angle 20	180
Regular or CS	CS
actual ETL	10
Which areas?	STG

Properties		Orientation Special sat.	Sagittal None
Prio Recon	Off		
Before measurement		Table position	H
After measurement		Table position	0 mm
Load to viewer	On	Inline Composing	Off
Inline movie	Off	System	
Auto store images	On	T1	On
Load to stamp segments	Off	M2	On
Load images to graphic	Off	B4	On
segments		M3	On
Auto open inline display	Off	V32	Off
Start measurement without	On		
further preparation		Positioning mode	REF
Wait for user to start	Off	MSMA	S - C - T
Start measurements	single	Sagittal	R >> L
Routine		Coronal	A >> P
Slab group 1		Transversal	F >> H
Slabs	1	Save uncombined	Off
Dist. factor	0 %	Coil Combine Mode	Adaptive Combine
Position	Isocenter	AutoAlign	
Orientation	Transversal	Auto Coil Select	Default
Phase enc. dir.	R >> L	Shim mode	Standard
Rotation	90.00 deg	Adjust with body coil	Off
Phase oversampling	0 %	Confirm freq. adjustment	Off
Slice oversampling	0.0 %	Assume Silicone	Off
Slices per slab	36	! Ref. amplitude 1H	220.000 V
FoV read	102.0 mm	Adjustment Tolerance	Auto
FoV phase	35.3 %	Adjust volume	Auto
Slice thickness	1.00 mm	Position	Isocenter
TR	1500 ms	Orientation	Transversal
TE	23.12 ms	Rotation	90.00 deg
Averages	1	A >> P	102 mm
Concatenations	1	R >> L	36 mm
Filter	None	F >> H	36 mm
Coil elements	B4;M2,3;T1	F >> F	36 11111
Con ciements	D+,W2,0,11	Physio	
Contrast		1st Signal/Mode	None
Magn. preparation	None	Composing	
Flip angle	160 deg	Composing	
Fat suppr.	Fat sat.	Sequence	
Fat sat. mode	Strong	Introduction	Off
Averaging mode	Long term	Dimension	3D
Reconstruction	Magnitude	Reordering	Centric
Measurements	396	Contrasts	1
Pause after meas.	0.0 s	Bandwidth	1140 Hz/Px
Multiple series	Off	Echo spacing	1.1 ms
1	.	Turbo factor	36
Resolution		EPI factor	12
Base resolution	102	RF pulse type	Normal
Phase resolution	100 %	Gradient mode	Fast
Slice resolution	100 %	Gradient mode	ı aət
Slice partial Fourier	Off	refocussing type	variable sinc
Interpolation	Off	flip angle excit	90
PAT mode	None	phase encoding	ON
		Maxwell compensation	Off
Prescan Normalize	Off	ICE program	single
Raw filter	Off	prepscans	0
Geometry		excite duration	2560
Geometry Series	Interleaved	refoc duration	3840
361165	IIIIEIIEAVEU	excite BWTP	12.0
Sat. region 1		refoc BWTP	8.0
Thickness	36 mm	Variable Flip Angle 01	180
D '''			
Position	Isocenter	Variable Flip Angle 02	180

Variable Flip Angle 03	180
Variable Flip Angle 04	180
Variable Flip Angle 05	180
Variable Flip Angle 06	180
Variable Flip Angle 07	180
Variable Flip Angle 08	180
Variable Flip Angle 09	180
Variable Flip Angle 10	180
Variable Flip Angle 11	180
Variable Flip Angle 12	180
Variable Flip Angle 13	180
Variable Flip Angle 14	180
Variable Flip Angle 15	180
Variable Flip Angle 16	180
Variable Flip Angle 17	180
Variable Flip Angle 18	180
Variable Flip Angle 19	180
Variable Flip Angle 20	180
Regular or CS	CS
actual ETL	14
Which areas?	STG

\\USER\Feinberglab\Suhyung\GRASE w/ CS for STG\ep2d_M1P2f1_iso150

TA: 9:16 PAT: 3 Voxel size: 1.5×1.5×1.5 mm Rel. SNR: 1.00 USER: ep2d_bold_OVS_flash

Properties		Sat. region 1	
Prio Recon	Off	- Thickness	110 mm
Before measurement		Position	L0.0 A50.7 H0.0
After measurement		Orientation	Coronal
Load to viewer	On	Sat. region 2	440
Inline movie	Off	Thickness	110 mm
Auto store images	On	Position	L0.0 P136.2 F35.7
Load to stamp segments	Off	Orientation	C > T14.7
Load images to graphic	Off	Special sat.	None
segments	OII	Table position	Н
Auto open inline display	Off	Table position	0 mm
Start measurement without	On	Inline Composing	Off
further preparation	OII	I milite Composing	Oil
Wait for user to start	Off	System	
Start measurements		T1	On
Start measurements	single	M2	On
Routine		B4	On
Slice group 1		- M3	On
Slices	12	V32	Off
Dist. factor	0 %		
Position	L1.2 P36.6 H20.5	Positioning mode	FIX
Orientation	Transversal	MSMA	S - C - T
Phase enc. dir.	A >> P	Sagittal	R >> L
Rotation	0.00 deg	Coronal	A >> P
Phase oversampling	0.00 deg 0 %	Transversal	F >> H
FoV read	216 mm	Coil Combine Mode	Sum of Squares
	_	AutoAlign	
FoV phase	80.6 %	Auto Coil Select	Default
Slice thickness	1.50 mm		
TR	1100 ms	Shim mode	Standard
TE .	18 ms	Adjust with body coil	Off
Averages	1	Confirm freq. adjustment	Off
Concatenations	1	Assume Silicone	Off
Filter	None	! Ref. amplitude 1H	200.000 V
Coil elements	B4;M2,3;T1	Adjustment Tolerance	Auto
Contrast		Adjust volume	
MTC	Off	Position	L1.2 P36.6 H20.5
Flip angle	70 deg	Orientation	Transversal
Fat suppr.	Fat sat.	Rotation	0.00 deg
1 at suppr.	1 at sat.	R >> L	216 mm
Averaging mode	Long term	A >> P	174 mm
Reconstruction	Magnitude	F >> H	18 mm
Measurements	500	Physic	
Delay in TR	0 ms	Physio	
Multiple series	Off	1st Signal/Mode	None
		BOLD	
Resolution		- GLM Statistics	Off
Base resolution	144	Dynamic t-maps	Off
Phase resolution	100 %	Starting ignore meas	0
Phase partial Fourier	7/8	Ignore after transition	0
Interpolation	Off	Model transition states	On
PAT mode	CDADDA		On On
Accel. factor PE	GRAPPA	Temp. highpass filter Threshold	_
	3		4.00
Ref. lines PE	48 Saparata	Paradigm size	20 Receline
Reference scan mode	Separate	Meas[1]	Baseline
Distortion Corr.	Off	Meas[2]	Baseline
Prescan Normalize	Off	Meas[3]	Baseline
Raw filter	On	Meas[4]	Baseline
Elliptical filter	Off	Meas[5]	Baseline
Hamming	Off	Meas[6]	Baseline
Hallining	OII	Meas[7]	Baseline
Geometry		Meas[8]	Baseline
Multi-slice mode	Interleaved	Meas[9]	Baseline
Series	Ascending	Meas[10]	Baseline
		Meas[11]	Active

Meas[12]	Active
Meas[13]	Active
Meas[14]	Active
Meas[15]	Active
Meas[16]	Active
Meas[17]	Active
Meas[18]	Active
Meas[19]	Active
Meas[20]	Active
Motion correction	Off
Spatial filter	Off

Sequence

Sequence	
Introduction Asymmetric echo Bandwidth Free echo spacing Echo spacing	Off Off 1828 Hz/Px Off 0.65 ms
EPI factor RF pulse type Gradient mode RF spoiling	116 Normal Fast On
RF90 duration MB Number DummyScan Number FOV Shift Number SkewType(1ff) OVS flash(1on) SER Number Spoil factor Skew Direction Sat RF90 duration Dual On(1) Echo Distance MB Measurements Ramp On	5120 1 1 1 0 1 1 1 1 5120 3 1.00 4 On

\\USER\Feinberglab\Suhyung\GRASE w/ CS for STG\ep2d_venc_ms_sbmb_SAT_flashref

TA: 0:40 PAT: 3 Voxel size: 1.5×1.5×1.5 mm Rel. SNR: 1.00 USER: ep2d_venc_ms_sbmb_SAT_flashref

Properties Prio Recon Before measurement After measurement Load to viewer Inline movie Auto store images	Off	Thickness Position Orientation	110 mm Isocenter
Before measurement After measurement Load to viewer Inline movie Auto store images			
After measurement Load to viewer Inline movie Auto store images		(INDITITION	
Load to viewer Inline movie Auto store images			Coronal
Inline movie Auto store images	On	Special sat.	None
Auto store images	Off	Table position	Н
	On	Table position	0 mm
Load to stamp segments	Off	Inline Composing	Off
Load images to graphic	Off	I milite Composing	On
segments	Oli	System	
Auto open inline display	Off	T1	On
		M2	On
Start measurement without	On	B4	On
further preparation	0"	M3	On
Wait for user to start	Off	V32	Off
Start measurements	single		
Routine		Positioning mode	REF
Slice group 1		MSMA	S-C-T
Slices	12	Sagittal	R >> L
Dist. factor	0 %	Coronal	A >> P
Position	Isocenter	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
	0.00 deg 0 %		
Phase oversampling		Shim mode	Standard
FoV read	216 mm	Adjust with body coil	Off
FoV phase	80.6 %	Confirm freq. adjustment	Off
Slice thickness	1.5 mm	Assume Silicone	Off
TR	1100 ms	! Ref. amplitude 1H	200.000 V
TE	18.0 ms	Adjustment Tolerance	Auto
Averages	1	Adjust volume	
Concatenations	1	Position	Isocenter
Filter	None	Orientation	Transversal
Coil elements	B4;M2,3;T1	Rotation	0.00 deg
1	21,1112,0,11	R >> L	216 mm
Contrast		——— A >> P	174 mm
MTC	Off	F>> H	18 mm
Flip angle	50 deg	1 >> 11	10 111111
Fat suppr.	Fat sat.	Physio	
Avaraging made	Long torm	1st Signal/Mode	None
Averaging mode	Long term		
Reconstruction	Magnitude	Angio	
Measurements	500	Flow mode	Free
Delay in TR	0 ms	Encodings	1
Multiple series	Off	Velocity enc.	40 cm/s
Resolution		Direction	Through plane
Base resolution	144	——— Magnitude sum	Off
Phase resolution	100 %	Seguence	
		Sequence	0#
Phase partial Fourier	7/8	Introduction	Off
Interpolation	Off	Bandwidth	1828 Hz/Px
PAT mode	GRAPPA	Free echo spacing	Off
Accel. factor PE	3	Echo spacing	0.88 ms
Ref. lines PE	48	EPI factor	116
Reference scan mode	Separate	RF pulse type	Normal
		Gradient mode	Fast
Distortion Corr.	Off		
Prescan Normalize	Off	RF spoiling	On
Raw filter	Off	RF90 duration	5120
Elliptical filter	Off	MB Number	1
Hamming	Off	DummyScan Number	1
	- ::	FOV Shift Number	1
Geometry		Shift K0 Center	1
Multi-slice mode	Interleaved		1
Series	Ascending	Every Other Slice	1
		SER Number	ı

Venc Repetition	1
Spoil factor	1
Skew Direction	0
Dual On(1)	1
Venc Type(0off,1+-,20+,3on)	50

\\USER\Feinberglab\Suhyung\GRASE w/ CS for STG\ep2d_venc_ms_sbmb_SAT_flashref_SH
TA: 0.2 s PAT: Off Voxel size: 7.8×3.9×5.0 mm Rel. SNR: 1.00 USER: ep2d_venc_ms_sbmb_SAT_flashref_i

Properties		Inline Composing	Off
Prio Recon	Off	System	
Before measurement		T1	On
After measurement		M2	Off
Load to viewer	On	B4	Off
Inline movie	Off	M3	Off
Auto store images	On	V32	Off
Load to stamp segments	Off	Positioning mode	DEE
Load images to graphic	Off	Positioning mode MSMA	REF 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
Routine		- Shim mode	Standard
Slice group 1			Off
Slices	1	Adjust with body coil Confirm freq. adjustment	Off
Dist. factor	200 %	Assume Silicone	Off
Position	Isocenter	? 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	500 mm	Rotation	0.00 deg
FoV phase	100.0 %	R >> L	500 mm
Slice thickness	5.0 mm	A >> P	500 mm
TR	59 ms	F >> H	5 mm
TE	1.0 ms	ı	O 111111
Averages	1	Physio	
Concatenations	1	1st Signal/Mode	None
Filter	None	Angio	
Coil elements	T1	Flow mode	Single dir.
Contrast		Encodings	1
MTC	Off	Velocity enc.	90 cm/s
Flip angle	90 deg	Direction	Through plane
Fat suppr.	Fat sat.	Magnitude sum	Off
Averaging mode	Long term	Sequence	
Reconstruction	Magnitude	Introduction	Off
Measurements	20	Bandwidth	752 Hz/Px
Delay in TR	0 ms	Free echo spacing	Off
Multiple series	Off	Echo spacing	1.4 ms
Resolution		EPI factor	64
Base resolution	128	RF pulse type	Normal
Phase resolution	50 %	Gradient mode	Fast
Phase partial Fourier	5/8	RF spoiling	On
Interpolation	Off		
		RF90 duration	5120
PAT mode	None	MB Number	1
Distortion Corr.	Off	DummyScan Number	1
Prescan Normalize	Off	FOV Shift Number	1
Raw filter	Off	Shift K0 Center	1
Elliptical filter	Off	Every Other Slice	1
Hamming	Off	SER Number	1
Geometry		Venc Repetition Spoil factor	1 5
Multi-slice mode	Interleaved	Skew Direction	0
Series		DualBand Sat	0
JEHES	Ascending	FOV Dir	0
Special sat.	None	Venc Type(0off,1+-,20+,3on)	0
Table position	H	νοπο τγρο(οσπ, ιτ-, 2στ, 3σπ)	
Table position	0 mm		
i abio positioni	• 111111		

Table of contents

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Feinberglab
       Suhyung
              GRASE w/ CS for STG
                     BP_RGRASE_24SL_1.0mm
                     BP_AccVGRASE_CFA_24SL_1.0mm_EPI20
                     BP_AccVGRASE_CFA_24SL_1.0mm_EPI16
                     {\sf BP\_AccVGRASE\_24SL\_1.0mm\_EPI20}
                     BP_AccVGRASE_24SL_1.0mm_EPI16
                     BP_AccVGRASE_24SL_1.0mm_EPI20_RefDuration2560
                      {\sf BP\_AccVGRASE\_36SL\_1.0mm\_EPI20}
                      BP_AccVGRASE_36SL_0.8mm
                      Functional Acquisitions
                     BP_AccCGRASE_24SL_1.0mm_TE23ms
                     BP_AccVGRASE_24SL_1.0mm_TE23ms
                     BP_AccVGRASE_24SL_1.0mm_TE21ms
                     {\sf BP\_AccVGRASE\_36SL\_1.0mm\_TE23ms}
                     Outer Volume Suppressions
                     ep2d_M1P2f1_iso150
                     ep2d_venc_ms_sbmb_SAT_flashref
                     ep2d_venc_ms_sbmb_SAT_flashref_SH
```