\\USER\Feinberglab\Test\ISMRM\M2F4P4_flashref_fa60

TA: 0:19 PAT: 4 Voxel size: 0.9×0.9×0.8 mm Rel. SNR: 1.00 USER: ep2d_bold_sbmb_cte_ipat_fov_asym_fla

Properties		Special sat.	None
Prio Recon	Off	_ Table position	H
Before measurement		Table position	0 mm
After measurement		Inline Composing	Off
Load to viewer	On	1	
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	311	M3	On
Auto open inline display	Off	V32	Off
Start measurement without	On	Desitioning mode	DEE
	Oli	Positioning mode	REF
further preparation	Off	MSMA	S-C-T
Wait for user to start		Sagittal	R >> L
Start measurements	single	Coronal	A >> P
Routine		Transversal Coil Combine Mode	F >> H
Slice group 1			Sum of Squares
Slices	36	AutoAlign	Defeat
Dist. factor	50 %	Auto Coil Select	Default
Position	L1.2 A16.4 H26.2	Shim mode	Standard
Orientation	T > C-15.0	Adjust with body coil	Off
Phase enc. dir.	A >> P	Confirm freq. adjustment	Off
Rotation	0.00 deg	Assume Silicone	Off
Phase oversampling	0 %	? Ref. amplitude 1H	0.000 V
FoV read	232 mm		
FoV phase	100.0 %	Adjustment Tolerance	Auto
Slice thickness		Adjust volume	140404011400
	0.8 mm	! Position	L1.2 A21.2 H18.8
TR	1750 ms	! Orientation	T > C-15.0
TE .	27 ms	! Rotation	0.00 deg
Averages	1	! R >> L	192 mm
Concatenations	1	! A >> P	192 mm
Filter	None	! F >> H	72 mm
Coil elements	B4;M2,3;T1	Physio	
Contrast		1st Signal/Mode	None
MTC	Off	_ ,	110110
Flip angle	60 deg	BOLD	
Fat suppr.	Fat sat.	GLM Statistics	Off
. с. серг.		Dynamic t-maps	Off
Averaging mode	Long term	Starting ignore meas	0
Reconstruction	Magnitude	Ignore after transition	0
Measurements	5	Model transition states	On
Delay in TR	0 ms	Temp. highpass filter	On
Multiple series	Off	Threshold	4.00
Pacalutian		Paradigm size	20
Resolution	050	- Meas[1]	Baseline
Base resolution	256	Meas[2]	Baseline
Phase resolution	100 %	Meas[3]	Baseline
Phase partial Fourier	6/8	Meas[4]	Baseline
Interpolation	Off	Meas[5]	Baseline
PAT mode	GRAPPA		Baseline
Accel. factor PE		Meas[6]	Baseline Baseline
	4	Meas[7]	
Ref. lines PE	48 Sanarata	Meas[8]	Baseline
Reference scan mode	Separate	Meas[9]	Baseline
D' / / O		Meas[10]	Baseline
Distortion Corr.			
	Off	Meas[11]	Active
Prescan Normalize	Off Off	Meas[11] Meas[12]	Active Active
Prescan Normalize Raw filter	Off Off Off	Meas[11] Meas[12] Meas[13]	Active Active Active
Prescan Normalize Raw filter Elliptical filter	Off Off Off Off	Meas[11] Meas[12] Meas[13] Meas[14]	Active Active Active Active
Prescan Normalize Raw filter	Off Off Off	Meas[11] Meas[12] Meas[13] Meas[14] Meas[15]	Active Active Active Active Active
Prescan Normalize Raw filter Elliptical filter	Off Off Off Off	Meas[11] Meas[12] Meas[13] Meas[14] Meas[15] Meas[16]	Active Active Active Active Active Active Active
Prescan Normalize Raw filter Elliptical filter Hamming	Off Off Off Off	Meas[11]	Active Active Active Active Active Active Active Active Active
Prescan Normalize Raw filter Elliptical filter Hamming Geometry	Off Off Off Off Off	Meas[11] Meas[12] Meas[13] Meas[14] Meas[15] Meas[16]	Active Active Active Active Active Active Active

	Meas[20] Motion correction Spatial filter	Active Off Off
,	Sequence	
	Introduction Asymmetric echo Bandwidth Free echo spacing Echo spacing	Off Off 1302 Hz/Px Off 0.91 ms
	EPI factor RF pulse type Gradient mode RF spoiling	256 Normal Fast On
	RF90 duration MB Number DummyScan Number FOV Shift Number Shift K0 Center Every Other Slice SER Number 2nd RFoff(1) Polarity(1) Dephase(0) Echo Distance MB Measurements Ramp On	5120 2 1 4 1 1 1 0 0 0 1.00 2 On

TA: 0:28 PAT: 4	Voxel size: 0.9×0.9×3.0	mm Rel. SNR: 1.00 USER:	ep2d_bold_OVS_flash
Properties		Sat. region 1	
Prio Recon	Off	Thickness	50 mm
	Oli	Position	L0.0 A65.8 H0.0
Before measurement		Orientation	Coronal
After measurement	0.5	Sat. region 2	
Load to viewer	On O#	Thickness	50 mm
Inline movie	Off	Position	L0.0 P60.0 H0.0
Auto store images	On O#	Orientation	Coronal
Load to stamp segments	Off Off	Special sat.	None
Load images to graphic	Off	Table position	
segments	0"	Table position	Н
Auto open inline display	Off	Table position	0 mm
Start measurement without	On	Inline Composing	Off
further preparation	0"	System	
Wait for user to start	Off	T1	On
Start measurements	single	M2	On
Routine		B4	On
Slice group 1		M3	On
Slices	12	V32	Off
Dist. factor	200 %		
Position	L1.2 A16.4 H26.2	Positioning mode	FIX
Orientation	T > C-15.0	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	220 mm	Coil Combine Mode	Sum of Squares
FoV phase	81.3 %	AutoAlign	
Slice thickness	3.00 mm	Auto Coil Select	Default
		Obine ne ede	04
TR TE	2000 ms	Shim mode	Standard
	23 ms	Adjust with body coil	Off
Averages	1	Confirm freq. adjustment	Off
Concatenations	1 Nana	Assume Silicone	Off
Filter	None	? Ref. amplitude 1H	0.000 V
Coil elements	B4;M2,3;T1	Adjustment Tolerance	Auto
Contrast		Adjust volume	
MTC	Off	—— Position	L1.2 A16.4 H26.2
Flip angle	50 deg	Orientation	T > C-15.0
Fat suppr.	Fat sat.	Rotation	0.00 deg
. а. оарр			220 mm
Averaging mode	Long term	A >> P	179 mm
Reconstruction	Magnitude	F >> H	102 mm
Measurements	8	Physio	
Delay in TR	0 ms	1st Signal/Mode	None
Multiple series	Off	1	140110
Resolution		BOLD	
Base resolution	256	—— GLM Statistics	Off
Phase resolution	100 %	Dynamic t-maps	Off
Phase partial Fourier	6/8	Starting ignore meas	0
Interpolation	Off	Ignore after transition	0
		Model transition states	On
PAT mode	GRAPPA	Temp. highpass filter	On
Accel. factor PE	4	Threshold	4.00
Ref. lines PE	24	Paradigm size	20
Reference scan mode	Separate	Meas[1]	Baseline
Distantian Os		···· Meas[2]	Baseline
Distortion Corr.	Off	Meas[3]	Baseline
Prescan Normalize	Off	Meas[4]	Baseline
Raw filter	On	Meas[5]	Baseline
Elliptical filter	Off	Meas[6]	Baseline
Hamming	Off	Meas[7]	Baseline
Geometry		Meas[8]	Baseline
Multi-slice mode	Interleaved	Meas[9]	Baseline
Series	Ascending	Meas[10]	Baseline
	Mocentully		
		···· 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	
Introduction Asymmetric echo	Off Off
Bandwidth	1220 Hz/Px
Free echo spacing	Off
Echo spacing	0.94 ms
EPI factor	208
RF pulse type	Normal
Gradient mode	Fast
RF spoiling	On
RF90 duration	5120
MB Number	2
DummyScan Number	2
FOV Shift Number	2
SkewType(1ff)	0
OVS flash(1on)	1
SER Number	1
Spoil factor	5
Skew Direction	1
Sat RF90 duration	5120
Dual On(1)	1
Echo Distance	1.00
MB Measurements	2
Ramp On	On

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TA: 0:42 PAT: 2 Voxel size: 3.1×3.1×5.0 mm Rel. SNR: 1.00 USER: ep2d_fid_mb_pcasl_DE_BS_flash

Properties		Special sat.	None
Prio Recon	Off	Table position	 Н
Before measurement		Table position	0 mm
After measurement			Off
Load to viewer	On	Inline Composing	Oli
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
Ctart measurements	Single	Coronal	A >> P
Routine		Transversal	F >> H
Slice group 1		Save uncombined	Off
Slices	12	Coil Combine Mode	Sum of Squares
Dist. factor	50 %	AutoAlign	
Position	Isocenter	Auto Coil Select	Default
Orientation	Transversal		
Phase enc. dir.	A >> P	Shim mode	Standard
Rotation	0.00 deg	Adjust with body coil	Off
Phase oversampling	0 %	Confirm freq. adjustment	Off
FoV read	200 mm	Assume Silicone	Off
FoV phase	100.0 %	? Ref. amplitude 1H	0.000 V
Slice thickness	5.0 mm	Adjustment Tolerance	Auto
TR	3000 ms	Adjust volume	
TE 1	14 ms	Position	Isocenter
		Orientation	Transversal
TE 2	31 ms	Rotation	0.00 deg
Averages	1	R >> L	200 mm
Concatenations	1	A >> P	200 mm
Filter	None	F >> H	88 mm
Coil elements	B4;M2,3;T1	ļ	00 111111
Contrast		Physio	
MTC	Off	1st Signal/Mode	None
Flip angle	90 deg	Perf	
Fat suppr.	Fat sat.	GBP	Off
		PBP	Off
Averaging mode	Long term	TTP	Off
Reconstruction	Magnitude	Original images	On
Measurements	11	Oliginal images	OII
Delay in TR	0 ms	Sequence	
Multiple series	Off	Introduction	Off
Resolution		Contrasts	2
Base resolution	64	- Bandwidth	3004 Hz/Px
Phase resolution	100 %	Free echo spacing	Off
	Off	Echo spacing	0.53 ms
Phase partial Fourier	_		
Interpolation	Off	EPI factor	64
PAT mode	GRAPPA	RF pulse type	Normal
Accel. factor PE	2	Gradient mode	Fast
Ref. lines PE	24	RF spoiling	On
Reference scan mode	Separate	RF90 duration	5120
Distortion Corr.	Off	MB Number	3
Prescan Normalize	Off	DummyScan Number	2
Raw filter	Off	FOV Shift Number	3
Elliptical filter	Off	Shift K0 Center	1
Hamming	Off	Every Other Slice	1
· ·		BS Type	1
Geometry		1	O#
-		Background Suppr.	Off
Multi-slice mode	Interleaved	Background Suppr. BS parameter[1]	0π 500 ms
-	Interleaved Ascending		

BS parameter[3]	0 ms
FOCI parameter[1]	800
FOCI parameter[2]	24
FOCI parameter[3]	1.0
FOCI parameter[4]	2000
Label Offset	80 mm
Post Label Delay	1000000 us

MB Measurements 3
Ramp On On

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TA: 0:20 PAT: 4 Voxel size: 0.8×0.8×0.8 mm Rel. SNR: 1.00 USER: ep2d_bold_sbmb_cte_ipat_fov_asym_flater

Properties		Special sat.	None
Prio Recon	Off	Table position	Н
Before measurement		Table position	0 mm
After measurement		Inline Composing	Off
Load to viewer	On	1	
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	Positioning mode	REF
further preparation	Oli	Positioning mode	
Wait for user to start	Off	MSMA	S-C-T
		Sagittal	R >> L
Start measurements	single	Coronal	A >> P
Routine		Transversal	F >> H
Slice group 1		Coil Combine Mode	Sum of Squares
Slices	48	AutoAlign	 D-flt
Dist. factor	50 %	Auto Coil Select	Default
Position	L1.2 A16.4 H26.2	Shim mode	Standard
Orientation	T > C-15.0	Adjust with body coil	Off
Phase enc. dir.	A >> P	Confirm freq. adjustment	Off
Rotation	0.00 deg	Assume Silicone	Off
Phase oversampling	0.00 deg 0 %		
FoV read	200 mm	? Ref. amplitude 1H	0.000 V
		Adjustment Tolerance	Auto
FoV phase	81.3 %	Adjust volume	
Slice thickness	0.8 mm	! Position	L1.2 A21.2 H18.8
TR	1820 ms	! Orientation	T > C-15.0
TE	25 ms	! Rotation	0.00 deg
Averages	1	! R >> L	192 mm
Concatenations	1	! A >> P	192 mm
Filter	None	! F >> H	72 mm
Coil elements	B4;M2,3;T1	Physio	
Contrast		1st Signal/Mode	None
MTC	Off	13t Signal/Mode	None
Flip angle	60 deg	BOLD	
Fat suppr.	Fat sat.	GLM Statistics	Off
		Dynamic t-maps	Off
Averaging mode	Long term	Starting ignore meas	0
Reconstruction	Magnitude	Ignore after transition	0
Measurements	5	Model transition states	On
Delay in TR	0 ms	Temp. highpass filter	On
Multiple series	Off	Threshold	4.00
•		Paradigm size	20
Resolution		Meas[1]	Baseline
Base resolution	256	Meas[1] Meas[2]	Baseline
Phase resolution		IVICUO 	Dascinio
	100 %		Raseline
Phase partial Fourier	6/8	Meas[3]	Baseline Baseline
Phase partial Fourier Interpolation		Meas[3] Meas[4]	Baseline
Interpolation	6/8 Off	Meas[3] Meas[4] Meas[5]	Baseline Baseline
Interpolation PAT mode	6/8 Off GRAPPA	Meas[3] Meas[4] Meas[5] Meas[6]	Baseline Baseline Baseline
Interpolation PAT mode Accel. factor PE	6/8 Off GRAPPA 4	Meas[3] Meas[4] Meas[5] Meas[6] Meas[7]	Baseline Baseline Baseline Baseline
Interpolation PAT mode Accel. factor PE Ref. lines PE	6/8 Off GRAPPA 4 48	Meas[3] Meas[4] Meas[5] Meas[6] Meas[7] Meas[8]	Baseline Baseline Baseline Baseline Baseline
Interpolation PAT mode Accel. factor PE	6/8 Off GRAPPA 4	Meas[3] Meas[4] Meas[5] Meas[6] Meas[7] Meas[8] Meas[9]	Baseline Baseline Baseline Baseline Baseline Baseline Baseline
Interpolation PAT mode Accel. factor PE Ref. lines PE Reference scan mode	6/8 Off GRAPPA 4 48 Separate	Meas[3] Meas[4] Meas[5] Meas[6] Meas[7] Meas[8] Meas[9] Meas[10]	Baseline Baseline Baseline Baseline Baseline Baseline Baseline Baseline
Interpolation PAT mode Accel. factor PE Ref. lines PE Reference scan mode Distortion Corr.	6/8 Off GRAPPA 4 48 Separate	Meas[3] Meas[4] Meas[5] Meas[6] Meas[7] Meas[8] Meas[9] Meas[10] Meas[11]	Baseline Baseline Baseline Baseline Baseline Baseline Baseline Active
Interpolation PAT mode Accel. factor PE Ref. lines PE Reference scan mode Distortion Corr. Prescan Normalize	6/8 Off GRAPPA 4 48 Separate Off Off	Meas[3] Meas[4] Meas[5] Meas[6] Meas[7] Meas[8] Meas[9] Meas[10] Meas[11] Meas[12]	Baseline Baseline Baseline Baseline Baseline Baseline Baseline Active Active
Interpolation PAT mode Accel. factor PE Ref. lines PE Reference scan mode Distortion Corr. Prescan Normalize Raw filter	6/8 Off GRAPPA 4 48 Separate Off Off Off	Meas[3] Meas[4] Meas[5] Meas[6] Meas[7] Meas[8] Meas[9] Meas[10] Meas[11]	Baseline Baseline Baseline Baseline Baseline Baseline Baseline Active
Interpolation PAT mode Accel. factor PE Ref. lines PE Reference scan mode Distortion Corr. Prescan Normalize Raw filter Elliptical filter	6/8 Off GRAPPA 4 48 Separate Off Off Off Off	Meas[3] Meas[4] Meas[5] Meas[6] Meas[7] Meas[8] Meas[9] Meas[10] Meas[11] Meas[12]	Baseline Baseline Baseline Baseline Baseline Baseline Baseline Active Active
Interpolation PAT mode Accel. factor PE Ref. lines PE Reference scan mode Distortion Corr. Prescan Normalize Raw filter	6/8 Off GRAPPA 4 48 Separate Off Off Off	Meas[3] Meas[4] Meas[5] Meas[6] Meas[7] Meas[8] Meas[9] Meas[10] Meas[11] Meas[12] Meas[13]	Baseline Baseline Baseline Baseline Baseline Baseline Baseline Active Active Active
Interpolation PAT mode Accel. factor PE Ref. lines PE Reference scan mode Distortion Corr. Prescan Normalize Raw filter Elliptical filter Hamming	6/8 Off GRAPPA 4 48 Separate Off Off Off Off	Meas[3] Meas[4] Meas[5] Meas[6] Meas[7] Meas[8] Meas[9] Meas[10] Meas[11] Meas[12] Meas[13] Meas[14] Meas[15]	Baseline Baseline Baseline Baseline Baseline Baseline Baseline Active Active Active Active
Interpolation PAT mode Accel. factor PE Ref. lines PE Reference scan mode Distortion Corr. Prescan Normalize Raw filter Elliptical filter Hamming Geometry	6/8 Off GRAPPA 4 48 Separate Off Off Off Off Off Off	Meas[3] Meas[4] Meas[5] Meas[6] Meas[7] Meas[8] Meas[9] Meas[10] Meas[11] Meas[12] Meas[13] Meas[14] Meas[15] Meas[16]	Baseline Baseline Baseline Baseline Baseline Baseline Baseline Active Active Active Active Active
Interpolation PAT mode Accel. factor PE Ref. lines PE Reference scan mode Distortion Corr. Prescan Normalize Raw filter Elliptical filter Hamming	6/8 Off GRAPPA 4 48 Separate Off Off Off Off	Meas[3] Meas[4] Meas[5] Meas[6] Meas[7] Meas[8] Meas[9] Meas[10] Meas[11] Meas[12] Meas[13] Meas[14] Meas[15]	Baseline Baseline Baseline Baseline Baseline Baseline Baseline Active Active Active Active Active Active Active

Meas[20] Motion correction Spatial filter	Active Off Off
Sequence Introduction	Off
Asymmetric echo Bandwidth Free echo spacing Echo spacing	Off 1086 Hz/Px Off 1.05 ms
EPI factor RF pulse type Gradient mode RF spoiling	208 Normal Fast On
RF90 duration MB Number DummyScan Number FOV Shift Number Shift K0 Center Every Other Slice SER Number 2nd RFoff(1) Polarity(1) Dephase(0) Echo Distance MB Measurements Ramp On	5120 2 1 2 1 1 1 0 0 0 0 1.00 2 On

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TA: 0:20 PAT: 4 Voxel size: 0.8×0.8×0.8 mm Rel. SNR: 1.00 USER: ep2d_bold_sbmb_cte_ipat_fov_asym_flatering page 1.00 page 1.00

Properties		Special sat.	None
Prio Recon	Off	Table position	Н
Before measurement		Table position	0 mm
After measurement		Inline Composing	Off
Load to viewer	On		
Inline movie	Off	System	
Auto store images	On	T1	On
Load to stamp segments	Off	M2	On
Load images to graphic	Off	B4	On
segments	OII	M3	On
Auto open inline display	Off	V32	Off
Start measurement without	On	Desitioning mode	DEE
	Oli	Positioning mode	REF
further preparation	Off	MSMA	S-C-T
Wait for user to start		Sagittal	R >> L
Start measurements	single	Coronal	A >> P
Routine		Transversal	F >> H
Slice group 1		Coil Combine Mode	Sum of Squares
Slices	48	AutoAlign	 D ()
Dist. factor	50 %	Auto Coil Select	Default
Position	L1.2 A16.4 H26.2	Shim mode	Standard
Orientation	T > C-15.0	Adjust with body coil	Off
Phase enc. dir.	R >> L		_
Rotation	90.00 deg	Confirm freq. adjustment	Off
		Assume Silicone	Off
Phase oversampling	0 %	? Ref. amplitude 1H	0.000 V
FoV read	200 mm	Adjustment Tolerance	Auto
FoV phase	81.3 %	Adjust volume	
Slice thickness	0.80 mm	! Position	L1.2 A21.2 H18.8
TR	1820 ms	! Orientation	T > C-15.0
TE	25 ms	! Rotation	0.00 deg
Averages	1	! R >> L	192 mm
Concatenations	1	! A >> P	192 mm
Filter	None	! F >> H	72 mm
Coil elements	B4;M2,3;T1	Discosis	
Contrast		Physio 1/Mada	Nana
MTC	Off	1st Signal/Mode	None
Flip angle	60 deg	BOLD	
	Fat sat.	GLM Statistics	Off
Fat suppr.	Fai Sai.	Dynamic t-maps	Off
Averaging mode	Long term	Starting ignore meas	0
Reconstruction	Magnitude	Ignore after transition	0
Measurements	5	Model transition states	On
Delay in TR	0 ms	Temp. highpass filter	On
Multiple series	Off	Threshold	4.00
•		Paradigm size	20
Resolution		Meas[1]	Baseline
Base resolution	256	Meas[2]	Baseline
Phase resolution	400.0/	ivica5[∠]	Dastillie
	100 %	Moool21	Docalina
Phase partial Fourier	6/8	Meas[3]	Baseline
Phase partial Fourier Interpolation		Meas[4]	Baseline
Interpolation	6/8 Off	Meas[4] Meas[5]	Baseline Baseline
Interpolation PAT mode	6/8 Off GRAPPA	Meas[4] Meas[5] Meas[6]	Baseline Baseline Baseline
Interpolation PAT mode Accel. factor PE	6/8 Off GRAPPA 4	Meas[4] Meas[5] Meas[6] Meas[7]	Baseline Baseline Baseline Baseline
Interpolation PAT mode Accel. factor PE Ref. lines PE	6/8 Off GRAPPA 4 48	Meas[4] Meas[5] Meas[6] Meas[7] Meas[8]	Baseline Baseline Baseline Baseline Baseline
Interpolation PAT mode Accel. factor PE	6/8 Off GRAPPA 4	Meas[4] Meas[5] Meas[6] Meas[7] Meas[8] Meas[9]	Baseline Baseline Baseline Baseline Baseline Baseline
Interpolation PAT mode Accel. factor PE Ref. lines PE Reference scan mode	6/8 Off GRAPPA 4 48 Separate	Meas[4] Meas[5] Meas[6] Meas[7] Meas[8] Meas[9] Meas[10]	Baseline Baseline Baseline Baseline Baseline Baseline Baseline Baseline
Interpolation PAT mode Accel. factor PE Ref. lines PE Reference scan mode Distortion Corr.	6/8 Off GRAPPA 4 48 Separate	Meas[4] Meas[5] Meas[6] Meas[7] Meas[8] Meas[9]	Baseline Baseline Baseline Baseline Baseline Baseline
Interpolation PAT mode Accel. factor PE Ref. lines PE Reference scan mode Distortion Corr. Prescan Normalize	6/8 Off GRAPPA 4 48 Separate Off Off	Meas[4] Meas[5] Meas[6] Meas[7] Meas[8] Meas[9] Meas[10]	Baseline Baseline Baseline Baseline Baseline Baseline Baseline Baseline
Interpolation PAT mode Accel. factor PE Ref. lines PE Reference scan mode Distortion Corr. Prescan Normalize Raw filter	6/8 Off GRAPPA 4 48 Separate Off Off Off	Meas[4] Meas[5] Meas[6] Meas[7] Meas[8] Meas[9] Meas[10] Meas[11] Meas[12]	Baseline Baseline Baseline Baseline Baseline Baseline Baseline Active
Interpolation PAT mode Accel. factor PE Ref. lines PE Reference scan mode Distortion Corr. Prescan Normalize Raw filter Elliptical filter	6/8 Off GRAPPA 4 48 Separate Off Off Off Off	Meas[4] Meas[5] Meas[6] Meas[7] Meas[8] Meas[9] Meas[10] Meas[11] Meas[12] Meas[13]	Baseline Baseline Baseline Baseline Baseline Baseline Baseline Active Active
Interpolation PAT mode Accel. factor PE Ref. lines PE Reference scan mode Distortion Corr. Prescan Normalize Raw filter	6/8 Off GRAPPA 4 48 Separate Off Off Off	Meas[4] Meas[5] Meas[6] Meas[7] Meas[8] Meas[9] Meas[10] Meas[11] Meas[12] Meas[13] Meas[14]	Baseline Baseline Baseline Baseline Baseline Baseline Baseline Active Active Active Active
Interpolation PAT mode Accel. factor PE Ref. lines PE Reference scan mode Distortion Corr. Prescan Normalize Raw filter Elliptical filter Hamming	6/8 Off GRAPPA 4 48 Separate Off Off Off Off	Meas[4] Meas[5] Meas[6] Meas[7] Meas[8] Meas[9] Meas[10] Meas[11] Meas[12] Meas[13] Meas[14] Meas[15]	Baseline Baseline Baseline Baseline Baseline Baseline Baseline Active Active Active Active Active
Interpolation PAT mode Accel. factor PE Ref. lines PE Reference scan mode Distortion Corr. Prescan Normalize Raw filter Elliptical filter Hamming Geometry	6/8 Off GRAPPA 4 48 Separate Off Off Off Off Off Off	Meas[4] Meas[5] Meas[6] Meas[7] Meas[8] Meas[9] Meas[10] Meas[11] Meas[12] Meas[13] Meas[14] Meas[15] Meas[16]	Baseline Baseline Baseline Baseline Baseline Baseline Baseline Active Active Active Active Active Active Active
Interpolation PAT mode Accel. factor PE Ref. lines PE Reference scan mode Distortion Corr. Prescan Normalize Raw filter Elliptical filter Hamming	6/8 Off GRAPPA 4 48 Separate Off Off Off Off	Meas[4] Meas[5] Meas[6] Meas[7] Meas[8] Meas[9] Meas[10] Meas[11] Meas[12] Meas[13] Meas[14] Meas[15]	Baseline Baseline Baseline Baseline Baseline Baseline Baseline Active Active Active Active Active

Meas[20] Motion correction Spatial filter	Active Off Off
Sequence	
Introduction Asymmetric echo Bandwidth Free echo spacing Echo spacing	Off Off 976 Hz/Px Off 1.15 ms
EPI factor RF pulse type Gradient mode RF spoiling	208 Normal Fast On
RF90 duration MB Number DummyScan Number FOV Shift Number Shift K0 Center Every Other Slice SER Number 2nd RFoff(1) Polarity(1) Dephase(0) Echo Distance MB Measurements Ramp On	5120 2 1 2 1 1 1 0 0 0 0 1.00 2 On

\\USER\Feinberglab\Test\ISMRM\M2F2P4_flashref_fa60-S36-TR1500

TA: 0:17 PAT: 4 Voxel size: 0.8×0.8×0.8 mm Rel. SNR: 1.00 USER: ep2d_bold_sbmb_cte_ipat_fov_asym_fla

Properties		Special sat.	None
Prio Recon	Off	Table position	Н
Before measurement		Table position	0 mm
After measurement		Inline Composing	Off
Load to viewer	On	Cyatam	
Inline movie	Off	System	0.5
Auto store images	On	T1 M2	On On
Load to stamp segments	Off	B4	On
Load images to graphic	Off	M3	On
segments		V32	Off
Auto open inline display	Off	V 32	
Start measurement without	On	Positioning mode	REF
further preparation		MSMA	S - C - T
Wait for user to start	Off	Sagittal	R >> L
Start measurements	single	Coronal	A >> P
Routine		Transversal	F >> H
Slice group 1		- Coil Combine Mode	Sum of Squares
Slices	36	AutoAlign	
Dist. factor	100 %	Auto Coil Select	Default
Position	L1.2 A16.4 H26.2	Shim mode	Standard
Orientation	T > C-15.0	Adjust with body coil	Off
Phase enc. dir.	R >> L	Confirm freq. adjustment	Off
Rotation	90.00 deg	Assume Silicone	Off
Phase oversampling	0 %	? Ref. amplitude 1H	0.000 V
FoV read	200 mm	Adjustment Tolerance	Auto
FoV phase	81.3 %	Adjust volume	, 10.10
Slice thickness	0.80 mm	! Position	L1.2 A21.2 H18.8
TR	1500 ms	! Orientation	T > C-15.0
TE	25 ms	! Rotation	0.00 deg
Averages	1	! R >> L	192 mm
Concatenations	1	! A >> P	192 mm
Filter	None	! F >> H	72 mm
Coil elements	B4;M2,3;T1	Physio	
Contrast		1st Signal/Mode	None
MTC	Off	- ,	140110
Flip angle	60 deg	BOLD	
Fat suppr.	Fat sat.	GLM Statistics	Off
		Dynamic t-maps	Off
Averaging mode	Long term	Starting ignore meas	0
Reconstruction	Magnitude	Ignore after transition	0
Measurements	5	Model transition states	On
Delay in TR	0 ms Off	Temp. highpass filter	On
Multiple series	Oli	Threshold Paradigm size	4.00
Resolution		i Paradidm Size	20
		<u> </u>	
Base resolution	256	- Meas[1]	Baseline
Base resolution Phase resolution	256 100 %	- Meas[1] Meas[2]	Baseline Baseline
		- Meas[1] Meas[2] Meas[3]	Baseline Baseline Baseline
Phase resolution	100 %	- Meas[1] Meas[2] Meas[3] Meas[4]	Baseline Baseline Baseline Baseline
Phase resolution Phase partial Fourier Interpolation	100 % 6/8 Off	- Meas[1] Meas[2] Meas[3] Meas[4] Meas[5]	Baseline Baseline Baseline Baseline Baseline
Phase resolution Phase partial Fourier Interpolation PAT mode	100 % 6/8 Off GRAPPA	- Meas[1] Meas[2] Meas[3] Meas[4] Meas[5] Meas[6]	Baseline Baseline Baseline Baseline Baseline Baseline Baseline
Phase resolution Phase partial Fourier Interpolation PAT mode Accel. factor PE	100 % 6/8 Off GRAPPA 4	- Meas[1] Meas[2] Meas[3] Meas[4] Meas[5] Meas[6] Meas[7]	Baseline Baseline Baseline Baseline Baseline Baseline Baseline Baseline
Phase resolution Phase partial Fourier Interpolation PAT mode Accel. factor PE Ref. lines PE	100 % 6/8 Off GRAPPA 4 48	- Meas[1] Meas[2] Meas[3] Meas[4] Meas[5] Meas[6] Meas[7] Meas[8]	Baseline Baseline Baseline Baseline Baseline Baseline Baseline Baseline Baseline
Phase resolution Phase partial Fourier Interpolation PAT mode Accel. factor PE	100 % 6/8 Off GRAPPA 4 48 Separate	- Meas[1] Meas[2] Meas[3] Meas[4] Meas[5] Meas[6] Meas[7] Meas[8] Meas[9]	Baseline
Phase resolution Phase partial Fourier Interpolation PAT mode Accel. factor PE Ref. lines PE Reference scan mode Distortion Corr.	100 % 6/8 Off GRAPPA 4 48 Separate	- Meas[1] Meas[2] Meas[3] Meas[4] Meas[5] Meas[6] Meas[7] Meas[8] Meas[9] Meas[10]	Baseline
Phase resolution Phase partial Fourier Interpolation PAT mode Accel. factor PE Ref. lines PE Reference scan mode	100 % 6/8 Off GRAPPA 4 48 Separate Off Off	- Meas[1] Meas[2] Meas[3] Meas[4] Meas[5] Meas[6] Meas[7] Meas[8] Meas[9] Meas[10] Meas[11]	Baseline Active
Phase resolution Phase partial Fourier Interpolation PAT mode Accel. factor PE Ref. lines PE Reference scan mode Distortion Corr. Prescan Normalize Raw filter	100 % 6/8 Off GRAPPA 4 48 Separate Off Off	- Meas[1] Meas[2] Meas[3] Meas[4] Meas[5] Meas[6] Meas[7] Meas[8] Meas[9] Meas[10] Meas[11] Meas[12]	Baseline Active Active
Phase resolution Phase partial Fourier Interpolation PAT mode Accel. factor PE Ref. lines PE Reference scan mode Distortion Corr. Prescan Normalize Raw filter Elliptical filter	100 % 6/8 Off GRAPPA 4 48 Separate Off Off Off Off	- Meas[1] Meas[2] Meas[3] Meas[4] Meas[5] Meas[6] Meas[7] Meas[8] Meas[9] Meas[10] Meas[11] Meas[12] Meas[13]	Baseline Active Active Active
Phase resolution Phase partial Fourier Interpolation PAT mode Accel. factor PE Ref. lines PE Reference scan mode Distortion Corr. Prescan Normalize Raw filter	100 % 6/8 Off GRAPPA 4 48 Separate Off Off	- Meas[1] Meas[2] Meas[3] Meas[4] Meas[5] Meas[6] Meas[7] Meas[8] Meas[9] Meas[10] Meas[11] Meas[12] Meas[13] Meas[14]	Baseline Active Active Active Active
Phase resolution Phase partial Fourier Interpolation PAT mode Accel. factor PE Ref. lines PE Reference scan mode Distortion Corr. Prescan Normalize Raw filter Elliptical filter Hamming	100 % 6/8 Off GRAPPA 4 48 Separate Off Off Off Off	- Meas[1] Meas[2] Meas[3] Meas[4] Meas[5] Meas[6] Meas[7] Meas[8] Meas[9] Meas[10] Meas[11] Meas[12] Meas[13] Meas[14] Meas[15]	Baseline Active Active Active Active Active
Phase resolution Phase partial Fourier Interpolation PAT mode Accel. factor PE Ref. lines PE Reference scan mode Distortion Corr. Prescan Normalize Raw filter Elliptical filter Hamming Geometry	100 % 6/8 Off GRAPPA 4 48 Separate Off Off Off Off Off	Meas[1] Meas[2] Meas[3] Meas[4] Meas[5] Meas[6] Meas[7] Meas[8] Meas[9] Meas[10] Meas[11] Meas[12] Meas[13] Meas[14] Meas[15] Meas[15]	Baseline Baseline Baseline Baseline Baseline Baseline Baseline Baseline Baseline Bateline Bateline Bateline Bateline Bateline Bateline Bateline Bateline Active Active Active Active Active Active
Phase resolution Phase partial Fourier Interpolation PAT mode Accel. factor PE Ref. lines PE Reference scan mode Distortion Corr. Prescan Normalize Raw filter Elliptical filter Hamming	100 % 6/8 Off GRAPPA 4 48 Separate Off Off Off Off	- Meas[1] Meas[2] Meas[3] Meas[4] Meas[5] Meas[6] Meas[7] Meas[8] Meas[9] Meas[10] Meas[11] Meas[12] Meas[13] Meas[14] Meas[15]	Baseline Active Active Active Active Active

	Meas[20] Motion correction Spatial filter	Active Off Off
,	Sequence	
	Introduction Asymmetric echo Bandwidth Free echo spacing Echo spacing	Off Off 976 Hz/Px Off 1.15 ms
	EPI factor RF pulse type Gradient mode RF spoiling	208 Normal Fast On
	RF90 duration MB Number DummyScan Number FOV Shift Number Shift K0 Center Every Other Slice SER Number 2nd RFoff(1) Polarity(1) Dephase(0) Echo Distance MB Measurements Ramp On	5120 2 1 2 1 1 1 1 0 0 0 0 1.00 2 On

		_	
\\USER\Feinberglab\Test\ISMRM\M2F2P4	flachrof fa60	S36 TR1500	ΔP

TA: 0:17 PAT: 4 Voxel size: 0.8×0.8×0.8 mm Rel. SNR: 1.00 USER: ep2d_bold_sbmb_cte_ipat_fov_asym_flatering patential states and the control of the control o

Properties		Special sat.	None
Prio Recon	Off	Table position	Н
Before measurement		Table position	0 mm
After measurement		Inline Composing	Off
Load to viewer	On		
Inline movie	Off	System	
Auto store images	On	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	Positioning mode	REF
further preparation		MSMA	S - C - T
Wait for user to start	Off	Sagittal	R >> L
Start measurements	single	Coronal	A >> P
	g.:	Transversal	F >> H
Routine		Coil Combine Mode	Sum of Squares
Slice group 1		AutoAlign	
Slices	36	Auto Coil Select	Default
Dist. factor	100 %	Auto Coli Select	Delault
Position	L1.2 A16.4 H26.2	Shim mode	Standard
Orientation	T > C-15.0	Adjust with body coil	Off
Phase enc. dir.	A >> P	Confirm freq. adjustment	Off
Rotation	0.00 deg	Assume Silicone	Off
Phase oversampling	0 %	? Ref. amplitude 1H	0.000 V
FoV read	200 mm	Adjustment Tolerance	Auto
FoV phase	100.0 %	Adjust volume	
Slice thickness	0.80 mm	Position	L1.2 A16.4 H26.2
TR	1500 ms	Orientation	T > C-15.0
TE	26 ms	Rotation	0.00 deg
Averages	1	R >> L	200 mm
Concatenations	1	A >> P	200 mm
Filter	None	F >> H	57 mm
Coil elements	B4;M2,3;T1	I	<i>0.</i>
	, ,-,	Physio	
Contrast	~"	1st Signal/Mode	None
MTC	Off	BOLD	
Flip angle	60 deg	GLM Statistics	Off
Fat suppr.	Fat sat.	Dynamic t-maps	Off
Averaging mode	Long term	Starting ignore meas	0
Reconstruction	Magnitude	Ignore after transition	0
Measurements	5	Model transition states	On
Delay in TR	0 ms	Temp. highpass filter	On
Multiple series	Off	Threshold	4.00
•	-	Paradigm size	20
Resolution		- Meas[1]	Baseline
Base resolution	256	Meas[1]	Baseline
Phase resolution	100 %	Meas[3]	Baseline
Phase partial Fourier	6/8	Meas[4]	Baseline
Interpolation	Off	Meas[4] Meas[5]	Baseline
PAT mode	GRAPPA		Baseline
Accel. factor PE		Meas[6]	Baseline Baseline
	4	Meas[7]	
Ref. lines PE	48 Saparata	Meas[8]	Baseline
Reference scan mode	Separate	Meas[9]	Baseline
Distortion Corr.	Off	Meas[10]	Baseline
Prescan Normalize	Off	Meas[11]	Active
Raw filter	Off	Meas[12]	Active
Elliptical filter	Off	Meas[13]	Active
Hamming	Off	Meas[14]	Active
	- ·-	Meas[15]	Active
Geometry		Meas[16]	Active
Multi-slice mode	Interleaved	Meas[17]	Active
Corios	A	1/10001101	0 otu 10
Series	Ascending	Meas[18] Meas[19]	Active Active

Meas[20] Motion correction Spatial filter	Active Off Off
Sequence Introduction Asymmetric echo Bandwidth	Off Off 1086 Hz/Px
Free echo spacing Echo spacing	Off 1.03 ms
EPI factor RF pulse type Gradient mode RF spoiling	256 Normal Fast On
RF90 duration MB Number DummyScan Number FOV Shift Number Shift K0 Center Every Other Slice SER Number 2nd RFoff(1) Polarity(1) Dephase(0) Echo Distance MB Measurements Ramp On	5120 2 1 2 1 1 1 1 0 0 0 0 1.00 2 On

 $\verb|\USER\Feinberg| lab\Test\ISMRM\ep2d_M2P4_OVS_flash_D1K0| |$

USER: ep2d_bold_OVS_flash

Voxel size: 0.9×0.9×3.0 mm Rel. SNR: 1.00

TA: 0:22

PAT: 4

TA. 0.22 FAT. 4	VOXel Size. 0.9x0.9x3.0 IIIIII	Rei. SINK. 1.00 USEK.	epzu_bolu_Ov3_liasi1
		Cot region 1	
Properties		Sat. region 1 Thickness	F0 mm
Prio Recon	Off	Position	50 mm L0.0 A98.8 H25.9
Before measurement		Orientation	C > T14.7
After measurement			C > 114.7
Load to viewer	On	Sat. region 2	F0 mm
Inline movie	Off	Thickness	50 mm
Auto store images	On	Position	L0.0 P57.6 F15.1
Load to stamp segments	Off	Orientation	C > T14.7
Load images to graphic	Off	Special sat.	None
segments		Table position	Н
Auto open inline display	Off	Table position	0 mm
Start measurement without	On	Inline Composing	Off
further preparation			.
Wait for user to start	Off	System	
Start measurements	single	T1	On
1	onigio	M2	On
Routine		B4	On
Slice group 1		M3	On
Slices	12	V32	Off
Dist. factor	200 %	Docitioning mode	EIV
Position	L1.2 A16.4 H26.2	Positioning mode	FIX S - C - T
Orientation	T > C-15.0	MSMA	
Phase enc. dir.	A >> P	Sagittal	R >> L
Rotation	0.00 deg	Coronal	A >> P
Phase oversampling	0 %	Transversal	F >> H
FoV read	220 mm	Coil Combine Mode	Sum of Squares
FoV phase	81.3 %	AutoAlign	
Slice thickness	3.00 mm	Auto Coil Select	Default
TR	2000 ms	Shim mode	Standard
TE	23 ms	Adjust with body coil	Off
Averages	1	Confirm freq. adjustment	Off
Concatenations	1	Assume Silicone	Off
Filter	None	? Ref. amplitude 1H	_
Coil elements	B4;M2,3;T1		0.000 V
Con elements	D4,IVI2,3,1 1	Adjustment Tolerance	Auto
Contrast		Adjust volume	140 440 41100 0
MTC	Off	Position	L1.2 A16.4 H26.2
Flip angle	50 deg	Orientation	T > C-15.0
Fat suppr.	Fat sat.	Rotation	0.00 deg
		R >> L	220 mm
Averaging mode	Long term	A >> P	179 mm
Reconstruction	Magnitude	F >> H	102 mm
Measurements	5	Physio	
Delay in TR	0 ms	1st Signal/Mode	None
Multiple series	Off		None
Resolution		BOLD	
Base resolution	256	GLM Statistics	Off
Phase resolution	100 %	Dynamic t-maps	Off
Phase partial Fourier	6/8	Starting ignore meas	0
•	Off	Ignore after transition	0
Interpolation	OII	Model transition states	On
PAT mode	GRAPPA	Temp. highpass filter	On
Accel. factor PE	4	Threshold	4.00
Ref. lines PE	24	Paradigm size	20
Reference scan mode	Separate	Meas[1]	Baseline
		Meas[2]	Baseline
Distortion Corr.	Off	Meas[3]	Baseline
Prescan Normalize	Off	Meas[4]	Baseline
Raw filter	On	Meas[4] Meas[5]	Baseline
Elliptical filter	Off	Meas[6]	Baseline
Hamming	Off		Baseline
		Meas[7]	Baseline Baseline
Geometry		Meas[8]	
Multi-slice mode	Interleaved	Meas[9]	Baseline
Series	Ascending	Meas[10]	Baseline Activo

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	
Introduction Asymmetric echo Bandwidth Free echo spacing Echo spacing	Off Off 1220 Hz/Px Off 0.94 ms
EPI factor RF pulse type Gradient mode RF spoiling	208 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 2 1 2 0 1 1 5 1 5120 1 1.00 2

\\USER\Feinberglab\Test\ISMRM\t1_mpr_tra_p2_iso

TA: 3:21	PAT: 2 Voxel size: 0.9x	0.9×0.9 mm Rel. SNR: 1.00	SIEMENS: tfl
Drapartica		Normalize	Off
Prioperties	0"	B1 filter	Off
Prio Recon	Off	Raw filter	Off
Before measurement		Elliptical filter	Off
After measurement	0	Cooreaction /	
Load to viewer	On Off	Geometry	Oise also also at
Inline movie	Off	Multi-slice mode	Single shot
Auto store images	On	Series	Ascending
Load to stamp segments	Off		
Load images to graphic	Off	Table position	H
segments	0"	Table position	0 mm
Auto open inline display	Off	Inline Composing	Off
Start measurement without	On	System	
further preparation	0"	T1	On
Wait for user to start	Off	M2	On
Start measurements	single	B4	On
Routine		M3	On
Slab group 1		W3 V32	Off
Slabs	1		
Dist. factor	50 %	Positioning mode	REF
Position	L0.0 P12.9 F4.1	MSMA	S - C - T
Orientation	Transversal	Sagittal	R >> L
Phase enc. dir.	R >> L	Coronal	A >> P
Rotation	90.00 deg	Transversal	F >> H
Phase oversampling	14 %	Save uncombined	Off
Slice oversampling	44.4 %	Coil Combine Mode	Adaptive Combine
Slices per slab	144	AutoAlign	·
FoV read	230 mm	Auto Coil Select	Off
FoV read FoV phase	87.5 %		
•	0.90 mm	Shim mode	Tune up
Slice thickness TR	1900 ms	Adjust with body coil	Off
TE		Confirm freq. adjustment	Off
	3.32 ms	Assume Silicone	Off
Averages	1	? Ref. amplitude 1H	0.000 V
Concatenations Filter	1 Name	Adjustment Tolerance	Auto
	None	Adjust volume	
Coil elements	B4;M2,3;T1	Position	Isocenter
Contrast		Orientation	Transversal
Magn. preparation	Non-sel. IR	Rotation	0.00 deg
TI .	900 ms	R >> L	350 mm
Flip angle	9 deg	A >> P	263 mm
Fat suppr.	None	F >> H	350 mm
Water suppr.	None	Physio	
		1st Signal/Mode	None
Averaging mode	Long term	······································	
Reconstruction	Magnitude	Dark blood	Off
Measurements	1 .	Poor control	O#
Multiple series	Each measurement	Resp. control	Off
Resolution		Inline	
Base resolution	256	Subtract	Off
Phase resolution	96 %	Std-Dev-Sag	Off
Slice resolution	100 %	Std-Dev-Cor	Off
Phase partial Fourier	6/8	Std-Dev-Tra	Off
Slice partial Fourier	Off	Std-Dev-Time	Off
		MIP-Sag	Off
Interpolation	Off	MIP-Cor	Off
PAT mode	GRAPPA	MIP-Tra	Off
Accel. factor PE	2	MIP-Time	Off
Ref. lines PE	24	Save original images	On
Accel. factor 3D	1		OII
Reference scan mode	Integrated	Saguence	
		Sequence	0.5
Image Filter	Off	Introduction	On
Distortion Corr.	Off	Dimension	3D
Prescan Normalize	Off	Elliptical scanning	Off

Asymmetric echo	Allowed
Bandwidth	180 Hz/Px
Flow comp.	No
Echo spacing	8.1 ms
RF pulse type	Normal
Gradient mode	Normal
Excitation	Slab-sel.
RF spoiling	On

\\USER\Feinberglab\Test\ISMRM\localizer_200V

Voxel size: 1.2×1.1×3.0 mm Rel. SNR: 1.00

SIEMENS: gre

PAT: Off

TA: 0:27

TA. 0.27 PA	AT. OII VOXEI SIZE. 1.2X1.	1x3.0 IIIII Rei. SNR. 1.00	SIEWENS. gre
Properties		Phase resolution	90 %
Prio Recon	Off	— Phase partial Fourier	6/8
Before measurement		Interpolation	On
After measurement		PAT mode	None
Load to viewer	On		
Inline movie	Off	Image Filter	Off
Auto store images	On	Distortion Corr.	Off
Load to stamp segments	Off	Prescan Normalize	Off
Load images to graphic	Off	Normalize	Off
segments		B1 filter	Off
Auto open inline display	Off	Raw filter	Off
Start measurement without	On	Elliptical filter	Off
further preparation		Geometry	
Wait for user to start	Off	Multi-slice mode	Sequential
Start measurements	single	Series	Interleaved
I	Sirigio		
Routine		Saturation mode	Standard
Slice group 1		Special sat.	None
Slices	5		
Dist. factor	20 %	Table position	Н
Position	Isocenter	Table position	0 mm
Orientation	Sagittal	Inline Composing	Off
Phase enc. dir.	A >> P		
Rotation	0.00 deg	Tim CT mode	Off
Slice group 2	3	System	
Slices	5	E17	On
Dist. factor	20 %	E18	On
Position	Isocenter	E19	On
Orientation	Coronal	E20	On
Phase enc. dir.	R >> L		_
Rotation	0.00 deg	E01	On
Slice group 3	0.00 409	E02	On
Slices	5	E03	On
Dist. factor	20 %	E04	On
Position	Isocenter	E05	On
Orientation	Transversal	E06	On
Phase enc. dir.	A >> P	E07	On
Rotation	0.00 deg	E08	On
	0.00 deg 0 %	E09	On
Phase oversampling	280 mm	E10	On
FoV read		E11	On
FoV phase	100.0 %	E12	On
Slice thickness	3.0 mm	E13	On
TR	10.0 ms	E14	On
TE	3.00 ms	E15	On
Averages	1	E16	On
Concatenations	15 No. 3	Dogitioning mode	EIV
Filter	None	Positioning mode MSMA	FIX S - C - T
Coil elements	E01-20		S-C-1 R>>L
Contrast		Sagittal Coronal	R >> L A >> P
TD	0 ms	Coronal Transversal	A >> P F >> H
MTC	Off		
Magn. preparation	None	Save uncombined	Off
Flip angle	10 deg	Coil Combine Mode	Adaptive Combine
Fat suppr.	None	AutoAlign	 O#
Water suppr.	None	Auto Coil Select	Off
SWI	Off	Shim mode	Tune up
	— — — — — — — — — — — — — — — — — — —	- Adjust with body coil	Off
Averaging mode	Short term	Confirm freq. adjustment	Off
Reconstruction	Magnitude	Assume Silicone	Off
Measurements	1	! Ref. amplitude 1H	200.000 V
Multiple series	Each measurement	Adjustment Tolerance	Auto
1		Adjust volume	Auto
Resolution	250	Position	Isocenter
Base resolution	256	Orientation	Transversal
		10/41	. 10110 101001

Rotation R >> L A >> P F >> H	0.00 deg 350 mm 263 mm 350 mm
Physio	
1st Signal/Mode Segments	None 1
Tagging Dark blood	None Off
Resp. control	Off
Inline	
Subtract Liver registration Std-Dev-Sag Std-Dev-Cor Std-Dev-Tra Std-Dev-Time MIP-Sag MIP-Cor MIP-Tra MIP-Time Save original images	Off
Wash - In Wash - Out TTP PEI MIP - time	Off Off Off Off Off
MapIt Contrasts	None 1
Sequence	
Introduction Dimension Phase stabilisation Asymmetric echo Bandwidth Flow comp.	On 2D Off Allowed 320 Hz/Px No
RF pulse type Gradient mode Excitation RF spoiling	Normal Whisper Slice-sel. On

\\USER\Feinberglab\Test\ISMRM\b1map_200V_TR100

TA: 0:32	Voxel size: 3.9x3.9x5.0 mm	Rel. SNR: 1.00 USER	: b1map_658
Droportino		Sagittal	R >> L
Properties	0"	Coronal	A >> P
Prio Recon	Off	Transversal	F >> H
Before measurement		Save uncombined	Off
After measurement		Coil Combine Mode	Adaptive Combine
Load to viewer	On	AutoAlign	
Inline movie	Off	Auto Coil Select	Default
Auto store images	On		
Load to stamp segments	Off	Shim mode	Tune up
Load images to graphic	Off	Adjust with body coil	Off
segments		Confirm freq. adjustment	Off
Auto open inline display	Off	Assume Silicone	Off
Start measurement without	On	! Ref. amplitude 1H	200.000 V
further preparation		Adjustment Tolerance	Auto
Wait for user to start	Off	Adjust volume	
Start measurements	single	Position	Isocenter
Start measurements	Single	Orientation	Transversal
Routine		Rotation	
Slice group 1	_		0.00 deg
Slices	1	R >> L	350 mm
Dist. factor	150 %	A >> P	263 mm
Position	L0.0 A5.4 H40.7	F >> H	350 mm
Orientation	T > C-17.8	Composing	
Phase enc. dir.	A >> P	Composing	
Phase enc. dir. Rotation		Sequence	
	0.00 deg	Contrasts	2
FoV read	250 mm	Bandwidth	260.416667 Hz/Px
FoV phase	100.0 %		
Slice thickness	5 mm	T1 Compensation	Mean T1
TR	425 ms	Mean T1	500.0 ms
TE 1	14 ms	Angles	1
TE 2	14 ms	Amplitude Weighting	Linear
Averages	1	Scale Bar	Enabled
Filter	None	Raw Data	Disabled
Coil elements		1	- · · · · · · · · · · · · · · ·
Contrast			
Flip angle 1	90 deg		
Flip angle 2	120 deg		
Flip angle 3	60 deg		
Flip angle 4	135 deg		
Flip angle 5	45 deg		
Measurements	1		
Resolution Base resolution	64		
Phase resolution	100 %		
Raw filter	Off		
Geometry			
Series	Interleaved		
Navigator 1			
Position	R1.4 A11.5 H37.3		
Orientation	T > C-18.6		
Rotation	0.00 deg		
Base size phase	129 mm		
Base size read	87 mm		
Thickness	50 mm		
Table position	Н		
Table position	0 mm		
Inline Composing	Off		
System			
Positioning mode	FIX		
NACNAN	0 0 T		

S - C - T

MSMA

\\USER\Feinberglab\Test\ISMRM\M2F2P4_flashref_fa60

TA: 0:48 PAT: 4 Voxel size: 0.8×0.8×0.8 mm Rel. SNR: 1.00 USER: ep2d_bold_sbmb_cte_ipat_fov_asym_fla

Properties		Special sat.	None
Prio Recon	Off	Table position	Н
Before measurement		Table position	0 mm
After measurement		Inline Composing	Off
Load to viewer	On	1	
Inline movie	Off	System	
Auto store images	On	E17	On
Load to stamp segments	Off	E18	On
Load images to graphic	Off	E19	On
segments	.	E20	On
Auto open inline display	Off	E01	On
Start measurement without	On	E02	On
further preparation	311	E03	On
Wait for user to start	Off	E04	On
Start measurements	single	E05	On
	Single	E06	On
Routine		E07	On
Slice group 1		E08	On
Slices	48	E09	On
Dist. factor	50 %	E10	On
Position	L1.2 A17.8 H50.0	E11	On
Orientation	T > C-15.0	E12	On
Phase enc. dir.	A >> P	E13	On
Rotation	0.00 deg	E14	On
Phase oversampling	0 %	E15	On
FoV read	200 mm	E16	On
FoV phase	81.3 %		
Slice thickness	0.8 mm	Positioning mode	REF
TR	4320 ms	MSMA	S - C - T
TE	25 ms	Sagittal	R >> L
Averages	1	Coronal	A >> P
Concatenations	1	Transversal	F >> H
Filter	None	Coil Combine Mode	Sum of Squares
Coil elements		AutoAlign	
Con elements	E01-20	Auto Coil Select	Default
Contrast		China manda	Oten devel
MTC	Off	— Shim mode	Standard
Flip angle	60 deg	Adjust with body coil	Off
Fat suppr.	Fat sat.	Confirm freq. adjustment	Off
		Assume Silicone	Off
Averaging mode	Long term	? Ref. amplitude 1H	0.000 V
Reconstruction	Magnitude	Adjustment Tolerance	Auto
Measurements	5	Adjust volume	
Delay in TR	0 ms	! Position	L1.2 A17.8 H47.9
Multiple series	Off	! Orientation	T > C-15.0
Resolution		! Rotation	0.00 deg
Base resolution	256	! R >> L	192 mm
Phase resolution	100 %	! A >> P	192 mm
		! F >> H	72 mm
Phase partial Fourier	6/8 Off	Physio	
Interpolation	Off		None
PAT mode	GRAPPA	1st Signal/Mode	None
Accel. factor PE	4	BOLD	
Ref. lines PE	24	GLM Statistics	Off
Reference scan mode	Separate	Dynamic t-maps	Off
		Starting ignore meas	0
Distortion Corr.		Usa ili u lunine meas	
	Off		
Prescan Normalize	Off	Ignore after transition	0
Prescan Normalize Raw filter		Ignore after transition Model transition states	0 On
	Off	Ignore after transition Model transition states Temp. highpass filter	0 On On
Raw filter	Off Off	Ignore after transition Model transition states Temp. highpass filter Threshold	0 On On 4.00
Raw filter Elliptical filter Hamming	Off Off Off	Ignore after transition Model transition states Temp. highpass filter Threshold Paradigm size	0 On On 4.00 20
Raw filter Elliptical filter Hamming Geometry	Off Off Off Off	Ignore after transition Model transition states Temp. highpass filter Threshold Paradigm size Meas[1]	0 On On 4.00 20 Baseline
Raw filter Elliptical filter Hamming Geometry Multi-slice mode	Off Off Off Off Interleaved	Ignore after transition Model transition states Temp. highpass filter Threshold Paradigm size Meas[1] Meas[2]	0 On On 4.00 20 Baseline Baseline
Raw filter Elliptical filter Hamming Geometry	Off Off Off Off	Ignore after transition Model transition states Temp. highpass filter Threshold Paradigm size Meas[1]	0 On On 4.00 20 Baseline

Meas[5]	Baseline
Meas[6]	Baseline
Meas[7]	Baseline
Meas[8]	Baseline
Meas[9]	Baseline
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

ocquerioc	
Introduction	Off
•	Off
Bandwidth	1086 Hz/Px
Free echo spacing	Off
Echo spacing	1.05 ms
EPI factor	208
RF pulse type	Normal
Gradient mode	Fast
RF spoiling	On
RF90 duration	5120
MB Number	2
DummyScan Number	1
FOV Shift Number	2
Shift K0 Center	1
Every Other Slice	1
SER Number	1
2nd RFoff(1)	0
Polarity(1)	0
Dephase(0)	0
Echo Distance	1.00
MB Measurements	2
Ramp On	On
	Asymmetric echo Bandwidth Free echo spacing Echo spacing EPI factor RF pulse type Gradient mode RF spoiling RF90 duration MB Number DummyScan Number FOV Shift Number Shift K0 Center Every Other Slice SER Number 2nd RFoff(1) Polarity(1) Dephase(0) Echo Distance MB Measurements

\\USER\Feinberglab\Test\ISMRM\M2F2P4_flashref_fa60_S36_TR1500_AP

TA: 0:36 PAT: 4 Voxel size: 0.8×0.8×0.8 mm Rel. SNR: 1.00 USER: ep2d_bold_sbmb_cte_ipat_fov_asym_fla

Properties		Special sat.	None
Prio Recon	Off	Table position	Н
Before measurement		Table position	0 mm
After measurement		Inline Composing	Off
Load to viewer	On	1	
Inline movie	Off	System	
Auto store images	On	E17	On
Load to stamp segments	Off	E18	On
Load images to graphic	Off	E19	On
segments	.	E20	On
Auto open inline display	Off	E01	On
Start measurement without	On	E02	On
further preparation	011	E03	On
Wait for user to start	Off	E04	On
Start measurements	single	E05	On
	Single	E06	On
Routine		E07	On
Slice group 1		E08	On
Slices	36	E09	On
Dist. factor	100 %	E10	On
Position	L1.2 A17.8 H50.0	E11	On
Orientation	T > C-15.0	E12	On
Phase enc. dir.	A >> P	E13	On
Rotation	0.00 deg	E14	On
Phase oversampling	0 %	E15	On
FoV read	200 mm	E16	On
FoV phase	100.0 %		
Slice thickness	0.80 mm	Positioning mode	FIX
TR	3240 ms	MSMA	S - C - T
TE	26 ms	Sagittal	R >> L
Averages	1	Coronal	A >> P
Concatenations	1	Transversal	F >> H
Filter	None	Coil Combine Mode	Sum of Squares
Coil elements		AutoAlign	
Coli elements	E01-20	Auto Coil Select	Default
Contrast		Chima manda	Ctandord
MTC	Off	- Shim mode	Standard
Flip angle	60 deg	Adjust with body coil	Off
Fat suppr.	Fat sat.	Confirm freq. adjustment	Off
		Assume Silicone	Off
Averaging mode	Long term	? Ref. amplitude 1H	0.000 V
Reconstruction	Magnitude	Adjustment Tolerance	Auto
Measurements	5	Adjust volume	
Delay in TR	0 ms	! Position	L1.2 A17.8 H47.9
Multiple series	Off	! Orientation	T > C-15.0
Resolution		! Rotation	0.00 deg
Base resolution	256	- ! R >> L	192 mm
Phase resolution	100 %	! A >> P	192 mm
		! F >> H	72 mm
Phase partial Fourier	6/8 Off	Physio	
Interpolation	Off		None
PAT mode	GRAPPA	1st Signal/Mode	None
Accel. factor PE	4	BOLD	
Ref. lines PE	36	GLM Statistics	Off
Reference scan mode	Separate	Dynamic t-maps	Off
		Starting ignore meas	0
Distortion Corr.	Off	Ignore after transition	0
Prescan Normalize	Off	Model transition states	On
Raw filter			
raw into	Off	Tomp highpage filter	()n
Elliptical filter		Temp. highpass filter	On 4.00
	Off	Threshold	4.00
Elliptical filter Hamming	Off Off	Threshold Paradigm size	4.00 20
Elliptical filter Hamming Geometry	Off Off Off	Threshold Paradigm size Meas[1]	4.00 20 Baseline
Elliptical filter Hamming Geometry Multi-slice mode	Off Off Off	Threshold Paradigm size Meas[1] Meas[2]	4.00 20 Baseline Baseline
Elliptical filter Hamming Geometry	Off Off Off	Threshold Paradigm size Meas[1]	4.00 20 Baseline

Meas[5]	Baseline
Meas[6]	Baseline
Meas[7]	Baseline
Meas[8]	Baseline
Meas[9]	Baseline
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	
Introduction	Off
Asymmetric echo	Off
Bandwidth	1086 Hz/Px
Free echo spacing	Off
Echo spacing	1.03 ms
EPI factor	256
RF pulse type	Normal
Gradient mode	Fast
RF spoiling	On
RF90 duration	5120
MB Number	2
DummyScan Number	1
FOV Shift Number	2
Shift K0 Center	1
Every Other Slice	1
SER Number	1
2nd RFoff(1)	0
Polarity(1)	0
Dephase(0)	0
Echo Distance	1.00
MB Measurements	2
Ramp On	On

\\USER\Feinberglab\Test\ISMRM\ep2d_M2P4_OVS_flash_D1K0						
TA:	0:11 PA	Γ: 4 Vox	el size: 0.8×0.8×0.8 mm	Rel. SNR: 1.00	USER: ep2d_bold_OVS_flash	

Hamming Geometry Multi-slice mode Series	Interleaved Ascending	GLM Statistics Dynamic t-maps Starting ignore meas	Off Off 0
Hamming Geometry		GLM Statistics	_
Hamming	5 11	_	Off
•	Oli	DOLD	
•	Off	BOLD	
Elliptical filter	Off	1st Signal/Mode	None
Raw filter	On	Physio	Name
Prescan Normalize	Off	ı	
Distortion Corr.	Off	!F>> H	72 mm
		! A >> P	192 mm
Reference scan mode	Separate	! R >> L	192 mm
Ref. lines PE	24	! Rotation	0.00 deg
Accel. factor PE	4	! Orientation	T > C-15.0
PAT mode	GRAPPA	! Position	L1.2 A17.8 H47.9
Interpolation	Off	Adjust volume	, 1010
Phase partial Fourier	6/8	Adjustment Tolerance	Auto
Phase resolution	100 %	? Ref. amplitude 1H	0.000 V
Base resolution	256	Assume Silicone	Off
Resolution		Confirm freq. adjustment	Off
Multiple series	Oil	Adjust with body coil	Off
•	0 ms Off	Shim mode	Standard
Measurements Delay in TR	5 0 ms	Auto Coil Select	Default
Reconstruction	Magnitude	AutoAlign	
Averaging mode	Long term	Coil Combine Mode	Sum of Squares
		··· Transversal	F >> H
Fat suppr.	Fat sat.	Coronal	A >> P
Flip angle	50 deg	Sagittal	R >> L
MTC	Off	MSMA	S - C - T
Contrast		Positioning mode	FIX
Coil elements	E01-20	E16	On
Filter	None	E15	On
Concatenations	1	E14	On
Averages	1	E13	On
TE	28 ms	E12	On
TR	1000 ms	E11	On
Slice thickness	0.75 mm	E10	On
FoV phase	40.6 %	E09	On
FoV read	192 mm	E08	On
Phase oversampling	0 %	E07	On
Rotation	0.00 deg	E06	On
Phase enc. dir.	A >> P	E05	On
Orientation	T > C-15.0	E04	On
Position		E03	
	200 % L1.2 A17.8 H50.0		On On
Slices Dist. factor	12	E01 E02	On On
Slice group 1	12	_	_
Routine		E19 E20	On On
	Č	E18	On
Start measurements	single	E17	On
Wait for user to start	Off	System	
further preparation	3 11		5 11
Start measurement without	On	Inline Composing	Off
Auto open inline display	Off	Table position	0 mm
segments		Table position	Н
Load images to graphic	Off	Special sat.	None
Load to stamp segments	Off	Orientation	C > T14.7
Auto store images	On	Position	L0.0 P57.6 F15.1
Inline movie	Off	Thickness	50 mm
Load to viewer	On	Sat. region 2	
After measurement		Orientation	C > T14.7
Before measurement	Oil	Position	L0.0 A98.8 H25.9
Properties Prio Recon	Off	—— Thickness	50 mm

Model transition states	On
Temp. highpass filter	On
Threshold	4.00
Paradigm size	20
Meas[1]	Baseline
Meas[2]	Baseline
Meas[3]	Baseline
Meas[4]	Baseline
Meas[5]	Baseline
Meas[6]	Baseline
Meas[7]	Baseline
Meas[8]	Baseline
Meas[9]	Baseline
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
_	

_	09401100	
	Introduction Asymmetric echo Bandwidth Free echo spacing Echo spacing	Off Off 1220 Hz/Px Off 1.02 ms
	EPI factor RF pulse type Gradient mode RF spoiling	104 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	9120 2 1 2 0 1 1 5 1 5120 1 1.00 2
	ı	

\\USER\Feinberglab\Test\ISMRM\ep2d_M2P4_OVS_flash_D1K0_iso6

TA: 0:22 PAT: 4	Voxel size: 0.6×0.6×0.6 mm		_ ep2d_bold_OVS_flash
5		Sat. region 1	
Properties		Thickness	80 mm
Prio Recon	Off	Position	L0.0 A14.5 H3.8
Before measurement		Orientation	C > T14.7
After measurement		Sat. region 2	0 > 114.7
Load to viewer	On		00 mm
Inline movie	Off	Thickness	80 mm
Auto store images	On	Position	L0.0 P120.6 F31.7
Load to stamp segments	Off	Orientation	C > T14.7
Load images to graphic	Off	Special sat.	None
segments	Oli	Table position	Н
	0#		
Auto open inline display	Off	Table position	0 mm
Start measurement without	On	Inline Composing	Off
further preparation		System	
Wait for user to start	Off	T1	On
Start measurements	single	M2	On
Routine		B4	On
Slice group 1	•	M3	On
Slices	24	V32	Off
Dist. factor	115 %	Positioning mode	FIX
Position	L0.5 P52.7 H18.1	MSMA	S - C - T
Orientation	T > C-15.0		R >> L
Phase enc. dir.	A >> P	Sagittal	
Rotation	0.00 deg	Coronal	A >> P
Phase oversampling	0 %	Transversal	F >> H
FoV read	160 mm	Coil Combine Mode	Sum of Squares
FoV phase	31.3 %	AutoAlign	
Slice thickness	0.60 mm	Auto Coil Select	Default
TR	2000 ms	Obine media	0
		Shim mode	Standard
TE	17 ms	Adjust with body coil	Off
Averages	1	Confirm freq. adjustment	Off
Concatenations	1	Assume Silicone	Off
Filter	None	? Ref. amplitude 1H	0.000 V
Coil elements	B4;M2,3;T1	Adjustment Tolerance	Auto
Contrast		Adjust volume	
	0"	! Position	L1.2 A17.8 H47.9
MTC	Off	! Orientation	T > C-15.0
Flip angle	50 deg	! Rotation	0.00 deg
Fat suppr.	Fat sat.	! R >> L	192 mm
Averaging mode	Long term	! A >> P	192 mm
	3		_
Reconstruction	Magnitude	! F >> H	72 mm
Measurements	5	Physio	
Delay in TR	0 ms	1st Signal/Mode	None
Multiple series	Off	1	. 10110
Resolution		BOLD	
Base resolution	256	GLM Statistics	Off
		Dynamic t-maps	Off
Phase resolution	100 %	Starting ignore meas	0
Phase partial Fourier	6/8	Ignore after transition	0
Interpolation	Off	Model transition states	On
PAT mode	GRAPPA	Temp. highpass filter	On
Accel. factor PE		Threshold	4.00
	4		
Ref. lines PE	24	Paradigm size	20
Reference scan mode	Separate	Meas[1]	Baseline
Distortion Corr.	Off	Meas[2]	Baseline
Prescan Normalize	Off	Meas[3]	Baseline
		Meas[4]	Baseline
Raw filter	On O#	Meas[5]	Baseline
Elliptical filter	Off	Meas[6]	Baseline
Hamming	Off	Meas[7]	Baseline
Geometry		Meas[8]	Baseline
Multi-slice mode	Interleaved	Meas[9]	Baseline
		Meas[10]	Baseline
Series	Ascending	Meas[10]	Activo

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	
Introduction	Off
Asymmetric echo	Off
Bandwidth	976 Hz/Px
Free echo spacing	Off
Echo spacing	1.23 ms
EPI factor	80
RF pulse type	Normal
Gradient mode	Fast
RF spoiling	On
RF90 duration	5120
MB Number	2
DummyScan Number	1
FOV Shift Number	2
SkewType(1ff)	0
OVS flash(1on)	1
SER Number	1
Spoil factor	0
Skew Direction	1
Sat RF90 duration	5120
Dual On(1)	3
Echo Distance	1.00
MB Measurements	2
Ramp On	On

\\USER\Feinberglab\Test\ISMRM\ep2d_M2P4_OVS_flash_D1K0_iso7

USER: ep2d_bold_OVS_flash

Voxel size: 0.7×0.7×0.7 mm Rel. SNR: 1.00

TA: 0:22

PAT: 4

171. 0.22	10.0.0.20.0.7.0.7.70.7.711111	Tren. Start. 1.00 GGER. C	
		Sat. region 1	
Properties		Thickness	80 mm
Prio Recon	Off	Position	L0.0 A26.1 H6.9
Before measurement		Orientation	C > T14.7
After measurement			C > 114.7
Load to viewer	On	Sat. region 2	20
Inline movie	Off	Thickness	80 mm
Auto store images	On	Position	L0.0 P120.6 F31.7
Load to stamp segments	Off	Orientation	C > T14.7
	Off	Special sat.	None
Load images to graphic	Oli	T. I.I. 32	
segments		Table position	H
Auto open inline display	Off	Table position	0 mm
Start measurement without	On	Inline Composing	Off
further preparation		System	
Wait for user to start	Off	System	
Start measurements	single	T1	On
ļ	9	M2	On
Routine		B4	On
Slice group 1		M3	On
Slices	24	V32	Off
Dist. factor	115 %		
Position	L0.5 P45.3 H19.4	Positioning mode	FIX
Orientation	T > C-15.0	MSMA	S - C - T
		Sagittal	R >> L
Phase enc. dir.	A >> P	Coronal	A >> P
Rotation	0.00 deg	Transversal	F >> H
Phase oversampling	0 %	Coil Combine Mode	Sum of Squares
FoV read	180 mm		
FoV phase	31.3 %	AutoAlign	
Slice thickness	0.70 mm	Auto Coil Select	Default
TR	2000 ms	Shim mode	Standard
TE	16 ms	Adjust with body coil	Off
Averages	1		Off
Concatenations	1	Confirm freq. adjustment	
		Assume Silicone	Off
Filter	None	? Ref. amplitude 1H	0.000 V
Coil elements	B4;M2,3;T1	Adjustment Tolerance	Auto
Contrast		Adjust volume	
MTC	Off	Position	L0.5 P45.3 H19.4
		Orientation	T > C-15.0
Flip angle	50 deg	Rotation	0.00 deg
Fat suppr.	Fat sat.	R >> L	180 mm
Avoraging mode	Long term	A >> P	57 mm
Averaging mode		F >> H	
Reconstruction	Magnitude	Г >> П	36 mm
Measurements	5	Physio	
Delay in TR	0 ms	1st Signal/Mode	None
Multiple series	Off	1	140110
Resolution		BOLD	
Base resolution	256	GLM Statistics	Off
		Dynamic t-maps	Off
Phase resolution	100 %	Starting ignore meas	0
Phase partial Fourier	6/8	Ignore after transition	0
Interpolation	Off	Model transition states	On
PAT mode	CDADDA		On
	GRAPPA	Temp. highpass filter	
Accel. factor PE	4	Threshold	4.00
Ref. lines PE	24	Paradigm size	20
Reference scan mode	Separate	Meas[1]	Baseline
Distortion Corr	Off	Meas[2]	Baseline
Distortion Corr.	Off	Meas[3]	Baseline
Prescan Normalize	Off	Meas[4]	Baseline
Raw filter	On	Meas[5]	Baseline
Elliptical filter	Off	Meas[6]	Baseline
Hamming	Off	1	
		Meas[7]	Baseline
Geometry		Meas[8]	Baseline
Multi-slice mode	Interleaved	Meas[9]	Baseline
Series	Ascending	Meas[10]	Baseline
		Meas[11]	Active
	,	20/44	

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	
Introduction Asymmetric echo Bandwidth Free echo spacing	Off Off 1086 Hz/Px Off
Echo spacing	1.13 ms
EPI factor RF pulse type Gradient mode RF spoiling	80 Normal Fast On
RF90 duration MB Number DummyScan Number FOV Shift Number SkewType(1ff) OVS flash(1on)	5120 2 1 2 0
SER Number Spoil factor Skew Direction Sat RF90 duration Dual On(1) Echo Distance MB Measurements Ramp On	1 0 1 5120 3 1.00 2 On

\\USER\Feinberglab\Test\ISMRM\ep2d_bold_OVS2_m2

Properties Prio Recon Before measurement After measurement Load to viewer Inline movie Auto store images Load to stamp segments Load images to graphic segments Auto open inline display	Off On Off	Sat. region 1 Thickness Position Orientation	110 mm L0.0 A46.9 H12.3
Prio Recon Before measurement After measurement Load to viewer Inline movie Auto store images Load to stamp segments Load images to graphic segments	On	Position Orientation	L0.0 A46.9 H12.3
Before measurement After measurement Load to viewer Inline movie Auto store images Load to stamp segments Load images to graphic segments	On	Orientation	
After measurement Load to viewer Inline movie Auto store images Load to stamp segments Load images to graphic segments			
Load to viewer Inline movie Auto store images Load to stamp segments Load images to graphic segments			C > T14.7
Inline movie Auto store images Load to stamp segments Load images to graphic segments		Sat. region 2	
Auto store images Load to stamp segments Load images to graphic segments	Off	Thickness	110 mm
Load to stamp segments Load images to graphic segments		Position	L0.0 P136.2 F35.7
Load images to graphic segments	On	Orientation	C > T14.7
segments	Off	Special sat.	None
segments	Off	Special Sat.	
		Table position	Н
	Off	Table position	0 mm
Start measurement without	On	Inline Composing	Off
further preparation		Thin Composing	011
Wait for user to start	Off	System	
_		T1	On
Start measurements	single	M2	On
Routine		B4	On
Slice group 1		 M3	On
Slices	12	V32	Off
Dist. factor	400 %	v 02	••••••••••••••••••••••••••••••••••••••
		Positioning mode	FIX
	L1.2 P45.3 H18.1	MSMA	S - C - T
	T > C-15.0	Sagittal	R >> L
	A >> P	Coronal	A >> P
Rotation	0.00 deg	Transversal	F >> H
Phase oversampling	0 %	Coil Combine Mode	Sum of Squares
FoV read	180 mm		
FoV phase	50.0 %	AutoAlign	
Slice thickness	0.6 mm	Auto Coil Select	Default
TR	4760 ms	Shim mode	Standard
TE	32 ms	Adjust with body coil	Off
Averages	1	Confirm freq. adjustment	Off
Concatenations	1		
Filter	None	Assume Silicone	Off
		? Ref. amplitude 1H	0.000 V
Coil elements	B4;M2,3;T1	Adjustment Tolerance	Auto
Contrast		Adjust volume	
MTC	Off	! Position	L1.2 A17.8 H47.9
Flip angle	90 deg	! Orientation	T > C-15.0
· · · · · ·	Fat sat.	! Rotation	0.00 deg
Fat suppr.	rai sai. 	! R >> L	192 mm
Averaging mode	Long term	! A >> P	192 mm
Reconstruction	Magnitude	! F >> H	72 mm
Measurements	12	ļ.	. —
Delay in TR	0 ms	Physio	
Multiple series	Off	1st Signal/Mode	None
Multiple Selles	Oli	BOLD	
Resolution		_	0#
Base resolution	256	GLM Statistics	Off
Phase resolution	100 %	Dynamic t-maps	Off
Phase partial Fourier	6/8	Starting ignore meas	0
Interpolation	Off	Ignore after transition	0
	OII	Model transition states	On
PAT mode	GRAPPA	Temp. highpass filter	On
Accel. factor PE	2	Threshold	4.00
Ref. lines PE	24	Paradigm size	16
Reference scan mode	Separate	Meas[1]	Baseline
		Meas[1]	Baseline
Distortion Corr.	Off		
Prescan Normalize	Off	Meas[3]	Baseline
Raw filter	On	Meas[4]	Baseline
Elliptical filter	Off	Meas[5]	Baseline
Hamming	Off	Meas[6]	Baseline
Hamming	Oil	Meas[7]	Baseline
Geometry		Meas[8]	Baseline
Multi-slice mode	Interleaved	Meas[9]	Baseline
Series	Ascending	Meas[10]	Baseline
		··· Meas[11]	Active

Active
Active
Active
Active
Active
Off
Off

Introduction Bandwidth Free echo spacing Echo spacing	Off 1028 Hz/Px Off 1.1 ms
EPI factor RF pulse type Gradient mode RF spoiling	128 Normal Fast On
RF90 duration MB Number DummyScan Number FOV Shift Number Shift K0 Center Every Other Slice SER Number Spoil factor Skew Direction Sat RF90 duration Dual On(1) Echo Distance MB Measurements Ramp On	5120 2 3 2 1 1 1 1 1 5120 3 1.00 3 On

\\USER\Feinberglab\Test\ISMRM\ep2d_M2P4_OVS_flash_D1K0_fsovs0 TA: 1:11 PAT: 2 Voxel size: 0.7×0.7×0.6 mm Rel. SNR: 1.00 USER: ep2d_bold_OVS_flash Sat. region 1 Properties Thickness 110 mm Prio Recon Off Position L0.0 A46.9 H12.3 Before measurement Orientation C > T14.7After measurement Sat. region 2 On Load to viewer Thickness 110 mm Inline movie Off Position L0.0 P136.2 F35.7 Auto store images On Orientation C > T14.7Load to stamp segments Off Special sat. None Load images to graphic Off segments Table position Н Off Auto open inline display Table position 0 mm Start measurement without Inline Composing Off On further preparation System Wait for user to start Off On Start measurements single M2 On Routine В4 On Slice group 1 М3 On Slices 12 Off V32 Dist. factor 400 % Positioning mode FIX Position L1.2 P45.3 H18.1 **MSMA** S - C - T Orientation T > C-15.0Sagittal R >> L Phase enc. dir. A >> P Coronal A >> P 0.00 deg Rotation Transversal F >> H Phase oversampling 0 % Coil Combine Mode Sum of Squares 180 mm FoV read AutoAlign FoV phase 50.0 % Auto Coil Select Default Slice thickness 0.60 mm TR 4760 ms Shim mode Standard ΤE 32 ms Adjust with body coil Off **Averages** Confirm freq. adjustment Off Concatenations Assume Silicone Off Filter None ? Ref. amplitude 1H 0.000 V Coil elements B4;M2,3;T1 Adjustment Tolerance Auto Adjust volume Contrast ! Position L1.2 A17.8 H47.9 MTC Off ! Orientation T > C-15.0Flip angle 90 deg 0.00 deg ! Rotation Fat suppr. Fat sat. ! R >> L 192 mm Averaging mode 192 mm Long term ! A >> P Reconstruction Magnitude !F>>H 72 mm Measurements 12 Physio Delay in TR 0 ms 1st Signal/Mode None Multiple series Off **BOLD** Resolution **GLM Statistics** Off Base resolution 256 Dynamic t-maps Off 100 % Phase resolution Starting ignore meas 0 6/8 Phase partial Fourier Ignore after transition n Interpolation Off Model transition states On PAT mode **GRAPPA** Temp. highpass filter On Accel. factor PE Threshold 4.00 Ref. lines PE 24 Paradigm size 20 Reference scan mode Separate Meas[1] Baseline Meas[2] Baseline Distortion Corr. Off Meas[3] Baseline Off Prescan Normalize Meas[4] Baseline Raw filter On Meas[5] Baseline Elliptical filter Off Meas[6] Baseline Hamming Off Meas[7] Baseline Meas[8] Geometry Baseline Meas[9] Baseline Multi-slice mode Interleaved

Ascending

Series

Meas[10]

Meas[11]

Baseline

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	
Introduction Asymmetric echo Bandwidth Free echo spacing Echo spacing	Off Off 1028 Hz/Px Off 1.1 ms
EPI factor RF pulse type Gradient mode RF spoiling	128 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 2 3 2 0 1 1 1 1 5120 3 1.00 3 On

\\USER\Feinberglab\Test\ISMRM\ep2d_M2P2_OVS_flash_iso55			
TA: 1:37 PAT: 2	Voxel size: 0.5×0.5×0.6 mm	•	ER: ep2d_bold_OVS_flash
Properties		Sat. region 1	
Prio Recon	Off	Thickness	110 mm
Before measurement	Oli	Position	L0.0 A43.2 H1.5
After measurement		Orientation	C > T2.0
Load to viewer	On	Sat. region 2	
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	Oli	Table position	Н
Auto open inline display	Off	Table position	0 mm
Start measurement without	On	Inline Composing	Off
	OII	Inline Composing	Oil
further preparation Wait for user to start	Off	System	
Start measurements		E17	On
Start measurements	single	E18	On
Routine		E19	On
Slice group 1		E20	On
Slices	50	E01	On
Dist. factor	50 %	E02	On
Position	L1.2 P44.6 H15.4	E03	On
Orientation	Transversal	E04	On
Phase enc. dir.	A >> P	E05	On
Rotation	0.00 deg	E06	On
Phase oversampling	0 %	E07	On
FoV read	140 mm	E08	On
FoV phase	50.0 %	E09	On
Slice thickness	0.55 mm	E10	On
TR	3120 ms	E11	On
TE	34 ms	E12	On
Averages	1	E13	On
Concatenations	1	E14	On
Filter	None	E15	On
Coil elements	E01-20	E16	On
Contrast		Positioning mode	FIX
MTC	Off	MSMA	S - C - T
Flip angle	70 deg	Sagittal	R >> L
Fat suppr.	Fat sat.	Coronal	A >> P
A	Langutawa	Transversal	F >> H
Averaging mode Reconstruction	Long term	Coil Combine Mode	Sum of Squares
Measurements	Magnitude 28	AutoAlign	
Delay in TR	0 ms	Auto Coil Select	Default
Multiple series	Off	Shim mode	Standard
	Oli	Adjust with body coil	Off
Resolution		Confirm freq. adjustme	
Base resolution	256	Assume Silicone	Off
Phase resolution	100 %	? Ref. amplitude 1H	0.000 V
Phase partial Fourier	6/8	Adjustment Tolerance	Auto
Interpolation	Off	Adjust volume	rato
PAT mode	GRAPPA	Position	L1.2 P44.6 H15.4
Accel. factor PE	2	Orientation	Transversal
Ref. lines PE	24	Rotation	0.00 deg
Reference scan mode	Separate	R >> L	140 mm
		A >> P	70 mm
Distortion Corr.	Off	F >> H	41 mm
Prescan Normalize	Off	l	·-
Raw filter	On	Physio	
Elliptical filter	Off	1st Signal/Mode	None
Hamming	Off	BOLD	
Geometry		GLM Statistics	Off
Multi-slice mode	Interleaved	Dynamic t-maps	Off
Series	Ascending	Starting ignore meas	0

Ascending

Series

Starting ignore meas

Ignore after transition

0

	Model transition states Temp. highpass filter Threshold Paradigm size Meas[1] Meas[2] Meas[3] Meas[4] Meas[5] Meas[6] Meas[7] Meas[8] Meas[9] Meas[10] Meas[11] Meas[12] Meas[13] Meas[14] Meas[15]	On On 4.00 20 Baseline Active Active Active Active Active Active
	Meas[13]	
	Meas[16]	Active
	Meas[17] Meas[18]	Active Active
	Meas[19]	Active
	Meas[20]	Active
	Motion correction	Off
	Spatial filter	Off
_		

Sequence	
Introduction Asymmetric echo Bandwidth Free echo spacing Echo spacing	Off Off 782 Hz/Px Off 1.4 ms
EPI factor RF pulse type Gradient mode RF spoiling	128 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	7680 2 1 1 0 1 1 1 1 5120 3 1.00 25 On

\\USER\Feinberglab\Test\ISMRM\ep2d_M2P2_OVS_flash_iso75			
TA: 1:37 PAT: 2	Voxel size: 0.8×0.8×0.8 mm	•	ep2d_bold_OVS_flash
		Sat. region 1	
Properties		Thickness	110 mm
Prio Recon	Off	Position	L0.0 A43.2 H1.5
Before measurement			
After measurement		Orientation	C > T2.0
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	Oli	Table position	Н
Auto open inline display	Off	Table position	0 mm
Start measurement without	On		Off
	OII	Inline Composing	Oii
further preparation Wait for user to start	0#	System	
	Off	E17	On
Start measurements	single	E18	On
Routine		E19	On
Slice group 1		E20	On
Slices	50	E01	On
Dist. factor	50 %	E02	On
Position	L1.2 P44.6 H15.4	E03	On
Orientation	Transversal	E04	On
Phase enc. dir.	A >> P	E05	On
Rotation	0.00 deg	E06	On
Phase oversampling	0 %	E07	On
FoV read	192 mm	E08	On
FoV phase	50.0 %	E09	On
Slice thickness	0.75 mm	E10	On
TR	3120 ms	E11	On
TE	27 ms	E12	On
Averages	1	E13	On
Concatenations	1	E14	On
Filter	None	E15	On
Coil elements	E01-20	E16	On
Contrast		Positioning mode	FIX
MTC	Off	MSMA	S - C - T
Flip angle	70 deg	Sagittal	R >> L
Fat suppr.	Fat sat.	Coronal	A >> P
Averaging mode	Long term	Transversal	F >> H
Reconstruction	Long term Magnitude	Coil Combine Mode	Sum of Squares
		AutoAlign	
Measurements	28	Auto Coil Select	Default
Delay in TR	0 ms	Obine no de	01
Multiple series	Off	Shim mode	Standard
Resolution		Adjust with body coil	Off
Base resolution	256	Confirm freq. adjustment	Off
Phase resolution	100 %	Assume Silicone	Off
Phase partial Fourier	6/8	? Ref. amplitude 1H	0.000 V
Interpolation	Off	Adjustment Tolerance	Auto
		Adjust volume	
PAT mode	GRAPPA	! Position	L12.7 P37.1 H14.7
Accel. factor PE	2	! Orientation	T > C-15.0
Ref. lines PE	24	! Rotation	0.00 deg
Reference scan mode	Separate	! R >> L	100 mm
Distantia: O		! A >> P	70 mm
Distortion Corr.	Off	! F >> H	48 mm
Prescan Normalize	Off	Dhysia	
Raw filter	On	Physio	N
Elliptical filter	Off	1st Signal/Mode	None
Hamming	Off	BOLD	
Geometry		GLM Statistics	Off
Multi-slice mode	Interleaved	Dynamic t-maps	Off
Series	Ascending	Starting ignore meas	0

Ascending

Series

Starting ignore meas

Ignore after transition

0

0

Model transition states	On
Temp. highpass filter	On
Threshold	4.00
Paradigm size	20
Meas[1]	Baseline
Meas[2]	Baseline
Meas[3]	Baseline
Meas[4]	Baseline
Meas[5]	Baseline
Meas[6]	Baseline
Meas[7]	Baseline
Meas[8]	Baseline
Meas[9]	Baseline
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
_	

Introduction	Off Off
Asymmetric echo Bandwidth	1086 Hz/Px
Free echo spacing	Off
Echo spacing	1.05 ms
EPI factor	128
RF pulse type	Normal
Gradient mode	Fast
RF spoiling	On
RF90 duration	7680
MB Number	2
DummyScan Number	1
FOV Shift Number	1
SkewType(1ff)	0
OVS flash(1on)	1
SER Number	1
Spoil factor	1
Skew Direction	1
Sat RF90 duration	5120
Dual On(1)	3
Echo Distance	1.00
MB Measurements	25
Ramp On	On

 $\verb|\USER\Feinberg| lab| Test| ISMRM | ep2d_venc_ms_sbmb_SAT_flashref| \\$

roperties		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	REF
Load images to graphic	Off	Positioning mode MSMA	S-C-T
segments			R >> L
Auto open inline display	Off	Sagittal 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	Sum of Squares
Start measurements	single	Auto Coil Select	Default
outine		Auto Coil Select	Delauit
		Shim mode	Standard
Slice group 1 Slices	1	Adjust with body coil	Off
Slices Dist. factor	1 200 %	Confirm freq. adjustment	Off
Dist. factor Position		Assume Silicone	Off
	Isocenter	? Ref. amplitude 1H	0.000 V
Orientation	Transversal	Adjustment Tolerance	Auto
Phase enc. dir.	A >> P	Adjust volume	
Rotation	0 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	79 ms	F >> H	5 mm
TE	1 ms	l	
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
			011
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	0 ms
esolution		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		
PAT mode		RF90 duration	5120
	None	MB Number DummyScan Number	1 1
Distortion Corr.	Off	FOV Shift Number	1
Prescan Normalize	Off	Shift K0 Center	1
Raw filter	Off	Every Other Slice	1
Elliptical filter	Off	SER Number	1
Hamming	Off	Venc Repetition	1
eometry		Spoil factor	5
Multi-slice mode	Interleaved	Skew Direction	0
Series	Ascending	Dual On(1)	0
	, , sociality	Venc Type(0off,1+-,20+,3on)	0
Special sat.	None	veno i ype(oon, 1+-,20+,301)	U
Table position	Н		
Lane Dominon	1.1		

Table position

0 mm

Table of contents

\\USER

Feinber	glab		
	Test		
		ISMRM	
			M2F4P4_flashref_fa60
			ep2d_M2P4_OVS_flash_D1K0
			ep2d_m3F3_pcasl_DE_BS_flash
			======nova coil======
			M2F2P4_flashref_fa60
			M2F2P4_flashref_fa60
			M2F2P4_flashref_fa60-S36-TR1500
			M2F2P4_flashref_fa60_S36_TR1500_AP
			ep2d_M2P4_OVS_flash_D1K0
			t1_mpr_tra_p2_iso
			======new coil=======
			localizer_200V
			b1map_200V_TR100
			M2F2P4_flashref_fa60
			M2F2P4_flashref_fa60_S36_TR1500_AP
			ep2d_M2P4_OVS_flash_D1K0
			=======================================
			ep2d_M2P4_OVS_flash_D1K0_iso6
			ep2d_M2P4_OVS_flash_D1K0_iso7
			======compare flash/epi reference======
			ep2d_bold_OVS2_m2
			ep2d_M2P4_OVS_flash_D1K0_fsovs0
			ep2d_M2P2_OVS_flash_iso55
			ep2d_M2P2_OVS_flash_iso75
			ep2d_venc_ms_sbmb_SAT_flashref