#### **SIEMENS MAGNETOM Terra**

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# FMRIF [XT-ID:01-RH-0001]Renzo scannercomparison localizer\_irtfl\_Richard head\_b1\_250V t1\_mp2rage\_sag\_p3\_0p75mm uk7t\_gre\_epi\_96\_FROM\_tYLER rslh\_ep3d\_vaso\_nih5kk\_sagslab\_dual rslh\_ep3d\_vaso\_nih5kk\_sagslab\_dual-gfactor

# $\verb|\USER\FMRIF|[XT-ID:01-RH-0001]| Renzo \ scanner comparison \ localizer\_irtfl\_Richard$

TA: 1:28 PM: REF Voxel size: 1.0×1.0×2.0 mmPAT: Off Rel. SNR: 1.00 : tfl

#### **Properties**

Prio recon	Off
Load images to viewer	On
Inline movie	Off
Auto store images	On
Load images to stamp segments	Off
Load images to graphic segments	Off
Auto open inline display	On
Auto close inline display	Off
Start measurement without further preparation	On
Wait for user to start	Off
Start measurements	Single measurement

#### Routine

Routine	
Slice group	1
Slices	6
Dist. factor	600 %
Position	L1.5 A5.0 F25.3 mm
Orientation	Sagittal
Phase enc. dir.	A >> P
Slice group	2
Slices	8
Dist. factor	250 %
Position	L1.5 A21.0 H30.0 mm
Orientation	Transversal
Phase enc. dir.	A >> P
Slice group	3
Slices	6
Dist. factor	700 %
Position	L1.5 A10.0 F25.9 mm
Orientation	Coronal
Phase enc. dir.	R >> L
AutoAlign	
Phase oversampling	0 %
FoV read	200 mm
FoV phase	100.0 %
Slice thickness	2.0 mm
TR	4300.0 ms
TE	3.46 ms
Averages	1
Concatenations	20
Filter	None
Coil elements	A32

#### **Contrast - Common**

TR	4300.0 ms
TE	3.46 ms
TD	0 ms
Magn. preparation	Slice-sel. IR
TI 1	840 ms
TI 2	2540 ms
Flip angle 1	5.0 deg
Flip angle 2	8.0 deg
Fat suppr.	None
Water suppr.	None

### **Contrast - Dynamic**

Averages	1
Averaging mode	Long term
Reconstruction	Magnitude

#### **Contrast - Dynamic**

Measurements	1
Multiple series	Each measurement

#### **Resolution - Common**

FoV read	200 mm
FoV phase	100.0 %
Slice thickness	2.0 mm
Base resolution	192
Phase resolution	100 %
Phase partial Fourier	Off
Interpolation	Off

#### **Resolution - iPAT**

PAT mode	None	

## **Resolution - Filter Image**

Image Filter	Off
Distortion Corr.	Off
Prescan Normalize	Off
Normalize	Off
B1 filter	Off

#### **Resolution - Filter Rawdata**

Raw filter	Off
Elliptical filter	Off

#### **Geometry - Common**

Slice group	1
Slices	6
Dist. factor	600 %
Position	L1.5 A5.0 F25.3 mm
Orientation	Sagittal
Phase enc. dir.	A >> P
Slice group	2
Slices	8
Dist. factor	250 %
Position	L1.5 A21.0 H30.0 mm
Orientation	Transversal
Phase enc. dir.	A >> P
Slice group	3
Slices	6
Dist. factor	700 %
Position	L1.5 A10.0 F25.9 mm
Orientation	Coronal
Phase enc. dir.	R >> L
FoV read	200 mm
FoV phase	100.0 %
Slice thickness	2.0 mm
TR	4300.0 ms
Multi-slice mode	Sequential
Series	Ascending
Concatenations	20

# **Geometry - AutoAlign**

Slice group	1
Position	L1.5 A5.0 F25.3 mm
Orientation	Sagittal
Phase enc. dir.	A >> P
Slice group	2
Position	L1.5 A21.0 H30.0 mm

#### **Geometry - AutoAlign**

Orientation         Transversal           Phase enc. dir.         A >> P           Slice group         3           Position         L1.5 A10.0 F25.9 mm           Orientation         Coronal           Phase enc. dir.         R >> L           AutoAlign            Initial Position         L1.5 A5.0 F25.3           L         1.5 mm           A         5.0 mm           F         25.3 mm           Initial Rotation         0.00 deg           Initial Orientation         Sagittal		
Slice group         3           Position         L1.5 A10.0 F25.9 mm           Orientation         Coronal           Phase enc. dir.         R >> L           AutoAlign            Initial Position         L1.5 A5.0 F25.3           L         1.5 mm           A         5.0 mm           F         25.3 mm           Initial Rotation         0.00 deg	Orientation	Transversal
Position L1.5 A10.0 F25.9 mm Orientation Coronal Phase enc. dir. R >> L  AutoAlign Initial Position L1.5 A5.0 F25.3 L 1.5 mm A 5.0 mm F 25.3 mm Initial Rotation 0.00 deg	Phase enc. dir.	A >> P
Orientation         Coronal           Phase enc. dir.         R >> L           AutoAlign            Initial Position         L1.5 A5.0 F25.3           L         1.5 mm           A         5.0 mm           F         25.3 mm           Initial Rotation         0.00 deg	Slice group	3
Phase enc. dir.         R >> L           AutoAlign            Initial Position         L1.5 A5.0 F25.3           L         1.5 mm           A         5.0 mm           F         25.3 mm           Initial Rotation         0.00 deg	Position	L1.5 A10.0 F25.9 mm
AutoAlign          Initial Position       L1.5 A5.0 F25.3         L       1.5 mm         A       5.0 mm         F       25.3 mm         Initial Rotation       0.00 deg	Orientation	Coronal
Initial Position L1.5 A5.0 F25.3  L 1.5 mm  A 5.0 mm  F 25.3 mm  Initial Rotation 0.00 deg	Phase enc. dir.	R >> L
L 1.5 mm A 5.0 mm F 25.3 mm Initial Rotation 0.00 deg	AutoAlign	
A 5.0 mm F 25.3 mm Initial Rotation 0.00 deg	Initial Position	L1.5 A5.0 F25.3
F 25.3 mm Initial Rotation 0.00 deg	L	1.5 mm
Initial Rotation 0.00 deg	A	5.0 mm
1	F	25.3 mm
Initial Orientation Sagittal	Initial Rotation	0.00 deg
g	Initial Orientation	Sagittal

# **Geometry - Navigator**

### **System - Miscellaneous**

Positioning mode	REF
Table position	Н
Table position	0 mm
MSMA	S - C - T
Sagittal	R >> L
Coronal	A >> P
Transversal	F >> H
Coil Combine Mode	Adaptive Combine
Save uncombined	Off
Matrix Optimization	Off
AutoAlign	
Coil Select Mode	Default

# **System - Adjustments**

B0 Shim mode	Tune up
B1 Shim mode	TrueForm
Confirm freq. adjustment	Off
Assume Dominant Fat	Off
Assume Silicone	Off
Adjustment Tolerance	Auto

# System - Adjust Volume

Position	Isocenter
Orientation	Transversal
Rotation	0.00 deg
A >> P	263 mm
R >> L	350 mm
F >> H	350 mm
Reset	Off

### System - Tx/Rx

Frequency 1H	297.145277 MHz
Correction factor	1
Gain	High
Img. Scale Cor.	1.000
Reset	Off
! Ref. amplitude 1H	250.000 V

## Physio - Signal1

1st Signal/Mode	None
TR	4300.0 ms
Concatenations	20

### **Physio - Cardiac**

Magn. preparation	Slice-sel. IR
TI 1	840 ms

#### Physio - Cardiac

TI 2	2540 ms
Fat suppr.	None
Dark blood	Off
FoV read	200 mm
FoV phase	100.0 %
Phase resolution	100 %

#### **Physio - PACE**

Resp. control	Off
Concatenations	20

### Inline - Common

Subtract	Off
Measurements	1
StdDev	Off
Save original images	On

### Inline - MIP

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

### **Inline - Composing**

Distortion Corr.	Off
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### Sequence - Part 1

Introduction	On
Dimension	2D
Asymmetric echo	Off
Flow comp.	No
Multi-slice mode	Sequential
Echo spacing	6.7 ms
Bandwidth	240 Hz/Px

# Sequence - Part 2

RF pulse type	Normal
Gradient mode	Fast
Excitation	Slice-sel.
RF spoiling	On
Incr. Gradient spoiling	Off
Turbo factor	192

## Sequence - Nuclei

TX/RX Nucleus	1H
TX/RX delta frequency	0 Hz
TX Nucleus	None
TX delta frequency	0 Hz
Coil elements	A32

Mode	Off	

# $\verb|\USER\FMRIF\[XT-ID:01-RH-0001]| Renzo \| scanner comparison \| head\_b1\_250V$

TA: 0:18 PM: REF Voxel size: 4.0×4.0×3.0 mmPAT: 2 Rel. SNR: 1.00 : tfl

#### **Properties**

Prio recon	Off
Load images to viewer	On
Inline movie	Off
Auto store images	On
Load images to stamp segments	Off
Load images to graphic segments	Off
Auto open inline display	Off
Auto close inline display	Off
Start measurement without further preparation	Off
Wait for user to start	Off
Start measurements	Single measurement

### Routine

Slice group	1
Slices	50
Dist. factor	33 %
Position	L2.3 A7.0 F9.4 mm
Orientation	Transversal
Phase enc. dir.	A >> P
AutoAlign	
Phase oversampling	0 %
FoV read	256 mm
FoV phase	100.0 %
Slice thickness	3.0 mm
TR	8500.0 ms
TE	1.92 ms
Averages	1
Concatenations	1
Filter	None
Coil elements	A32

#### **Contrast - Common**

TR	8500.0 ms
TE	1.92 ms
Magn. preparation	None
Flip angle	5 deg
Fat suppr.	None
Water suppr.	None

### **Contrast - Dynamic**

Averages	1
Reconstruction	Magnitude
Measurements	1
Multiple series	Each measurement

#### **Resolution - Common**

FoV read	256 mm
FoV phase	100.0 %
Slice thickness	3.0 mm
Base resolution	64
Phase resolution	100 %
Phase partial Fourier	Off
Interpolation	Off

#### **Resolution - iPAT**

PAT mode	GRAPPA
Accel. factor PE	2
Ref. lines PE	16
Reference scan mode	Integrated

#### **Resolution - Filter Image**

Image Filter	Off
Distortion Corr.	Off
Prescan Normalize	Off
Normalize	Off
B1 filter	Off

#### **Resolution - Filter Rawdata**

Raw filter	Off
Elliptical filter	Off

### **Geometry - Common**

Slice group	1
Slices	50
Dist. factor	33 %
Position	L2.3 A7.0 F9.4 mm
Orientation	Transversal
Phase enc. dir.	A >> P
FoV read	256 mm
FoV phase	100.0 %
Slice thickness	3.0 mm
TR	8500.0 ms
Multi-slice mode	Interleaved
Series	Interleaved
Concatenations	1

#### Geometry - AutoAlign

Slice group	1
Position	L2.3 A7.0 F9.4 mm
Orientation	Transversal
Phase enc. dir.	A >> P
AutoAlign	
Initial Position	L2.3 A7.0 F9.4
L	2.3 mm
A	7.0 mm
F	9.4 mm
Initial Rotation	0.00 deg
Initial Orientation	Transversal

### **System - Miscellaneous**

Positioning mode	REF
Table position	Н
Table position	0 mm
MSMA	S-C-T
Sagittal	R >> L
Coronal	A >> P
Transversal	F >> H
Coil Combine Mode	Sum of Squares
Save uncombined	Off
Matrix Optimization	Off
AutoAlign	
Coil Select Mode	Default

### **System - Adjustments**

B0 Shim mode	Tune up	
B1 Shim mode	TrueForm	
Confirm freq. adjustment	Off	
Assume Dominant Fat	Off	
Assume Silicone	Off	
Adjustment Tolerance	Auto	

# System - Adjust Volume

! Position	Isocenter
! Orientation	Transversal
! Rotation	0.00 deg
! A >> P	263 mm
! R >> L	350 mm
! F >> H	350 mm
Reset	Off

# System - Tx/Rx

Frequency 1H	297.145277 MHz
Correction factor	1
Gain	High
Img. Scale Cor.	1.000
Reset	Off
! Ref. amplitude 1H	250.000 V

### Inline - Common

Subtract	Off
Measurements	1
StdDev	Off
Save original images	On

# Inline - MIP

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

# Inline - Composing

# Sequence - Part 1

Introduction	Off
Dimension	2D
Asymmetric echo	Allowed
Flow comp.	No
Multi-slice mode	Interleaved
Echo spacing	4.2 ms
Bandwidth	440 Hz/Px

# Sequence - Part 2

RF pulse type	Fast
Gradient mode	Normal
Excitation	Slice-sel.
RF spoiling	On
Turbo factor	64

Mode	Off
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# \\USER\FMRIF\[XT-ID:01-RH-0001]Renzo\scannercomparison\t1\_mp2rage\_sag\_p3\_0p75mm

TA: 10:04 PM: FIX Voxel size: 0.8×0.8×0.8 mmPAT: 3 Rel. SNR: 1.00 : tfl

#### **Properties**

Prio recon	Off
Load images to viewer	On
Inline movie	Off
Auto store images	On
Load images to stamp segments	On
Load images to graphic segments	On
Auto open inline display	Off
Auto close inline display	Off
Start measurement without further	Off
preparation	
Wait for user to start	Off
Start measurements	Single measurement

### Routine

Slab group	1
Slabs	1
Dist. factor	50 %
Position	L0.4 A17.9 F33.0 mm
Orientation	Sagittal
Phase enc. dir.	A >> P
AutoAlign	
Phase oversampling	0 %
Slice oversampling	0.0 %
Slices per slab	240
FoV read	240 mm
FoV phase	100.0 %
Slice thickness	0.75 mm
TR	4600.0 ms
TE	1.94 ms
Averages	1
Concatenations	1
Filter	None
Coil elements	A32

#### **Contrast - Common**

TR	4600.0 ms
TE	1.94 ms
Magn. preparation	Non-sel. IR
TI 1	840 ms
TI 2	2370 ms
Flip angle 1	5.0 deg
Flip angle 2	6.0 deg
Fat suppr.	Water excit. fast
Water suppr.	None

## **Contrast - Dynamic**

Averages	1
Averaging mode	Long term
Reconstruction	Magnitude
Measurements	1
Multiple series	Each measurement

#### **Resolution - Common**

FoV read	240 mm
FoV phase	100.0 %
Slice thickness	0.75 mm
Base resolution	320
Phase resolution	100 %
Slice resolution	100 %
Phase partial Fourier	Off

#### **Resolution - Common**

Slice partial Fourier	6/8
Interpolation	Off

#### **Resolution - iPAT**

PAT mode	GRAPPA
Accel. factor PE	3
Ref. lines PE	37
Accel. factor 3D	1
Reference scan mode	Integrated

### **Resolution - Filter Image**

Image Filter	Off	
Distortion Corr.	Off	
Prescan Normalize	Off	
Normalize	Off	
B1 filter	Off	

#### **Resolution - Filter Rawdata**

Raw filter	Off	
Elliptical filter	Off	

### **Geometry - Common**

Slab group	1
Slabs	
Dist. factor	50 %
Position	L0.4 A17.9 F33.0 mm
Orientation	Sagittal
Phase enc. dir.	A >> P
Slice oversampling	0.0 %
Slices per slab	240
FoV read	240 mm
FoV phase	100.0 %
Slice thickness	0.75 mm
TR	4600.0 ms
Multi-slice mode	Single shot
Series	Interleaved
Concatenations	1

#### **Geometry - AutoAlign**

1
L0.4 A17.9 F33.0 mm
Sagittal
A >> P
L0.4 A17.9 F33.0
0.4 mm
17.9 mm
33.0 mm
0.00 deg
Sagittal

### **Geometry - Navigator**

#### **System - Miscellaneous**

Positioning mode	FIX
Table position	Н
Table position	0 mm
MSMA	S - C - T
Sagittal	L >> R
Coronal	P >> A

### System - Miscellaneous

Transversal	F >> H
Coil Combine Mode	Sum of Squares
Save uncombined	Off
Matrix Optimization	Off
AutoAlign	
Coil Select Mode	Default

# **System - Adjustments**

B0 Shim mode	Brain
B1 Shim mode	TrueForm
Confirm freq. adjustment	Off
Assume Dominant Fat	Off
Assume Silicone	Off
Adjustment Tolerance	Auto

# **System - Adjust Volume**

! Position	R1.6 A5.4 H16.3 mm
! Orientation	T > C-14.8
! Rotation	90.00 deg
! R >> L	144 mm
! A >> P	179 mm
! F >> H	97 mm
Reset	Off

# System - Tx/Rx

Frequency 1H	297.145277 MHz
Correction factor	1
Gain	High
Img. Scale Cor.	1.000
Reset	Off
! Ref. amplitude 1H	250.000 V

# Physio - Signal1

1st Signal/Mode	None
TR	4600.0 ms
Concatenations	1

# Physio - Cardiac

Magn. preparation	Non-sel. IR
TI 1	840 ms
TI 2	2370 ms
Fat suppr.	Water excit. fast
Dark blood	Off
FoV read	240 mm
FoV phase	100.0 %
Phase resolution	100 %

# Physio - PACE

Resp. control	Off
Concatenations	1

### Inline - Common

Subtract	Off
Measurements	1
StdDev	Off
Save original images	On

### Inline - MIP

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

# **Inline - Composing**

Distortion Corr.	Off

### Sequence - Part 1

Introduction	On
Dimension	3D
Elliptical scanning	Off
Reordering	Linear
Asymmetric echo	Allowed
Flow comp.	No
Multi-slice mode	Single shot
Echo spacing	7 ms
Bandwidth	250 Hz/Px

# Sequence - Part 2

RF pulse type	Fast
Gradient mode	Fast
Excitation	Non-sel.
RF spoiling	On
Incr. Gradient spoiling	On
Turbo factor	180

# Sequence - Nuclei

TX/RX Nucleus	1H
TX/RX delta frequency	0 Hz
TX Nucleus	None
TX delta frequency	0 Hz
Coil elements	A32

Mode	Off

# $\verb|\USER\FMRIF\[XT-ID:01-RH-0001]| Renzo \| scanner comparison \| wk7t\_gre\_epi\_96\_FROM\_tYLER \| scanner comparison \| wk7$

TA: 3:12 PM: FIX Voxel size: 1.5×1.5×1.5 mmPAT: 2 Rel. SNR: 1.00 : epfid

#### **Properties**

Prio recon	Off
Load images to viewer	On
Inline movie	Off
Auto store images	On
Load images to stamp segments	Off
Load images to graphic segments	Off
Auto open inline display	Off
Auto close inline display	Off
Start measurement without further preparation	Off
Wait for user to start	Off
Start measurements	Single measurement

#### Routine

Slice group	1
Slices	96
Dist. factor	0 %
Position	L0.0 A8.7 H9.5 mm
Orientation	T > C-15.0
Phase enc. dir.	A >> P
AutoAlign	
Phase oversampling	0 %
FoV read	192 mm
FoV phase	100.0 %
Slice thickness	1.50 mm
TR	1600 ms
TE	22.00 ms
Multi-band accel. factor	4
Filter	None
Coil elements	A32

#### **Contrast - Common**

TR	1600 ms
TE	22.00 ms
MTC	Off
Magn. preparation	None
Flip angle	65 deg
Fat suppr.	Fat sat.

### **Contrast - Dynamic**

Averaging mode	Long term
Reconstruction	Magn./Phase
Measurements	100
Delay in TR	0 ms
Multiple series	Off

#### **Resolution - Common**

FoV read	192 mm
FoV phase	100.0 %
Slice thickness	1.50 mm
Base resolution	128
Phase resolution	100 %
Phase partial Fourier	6/8
Interpolation	Off

#### **Resolution - iPAT**

PAT mode	GRAPPA
Accel. factor PE	2
Ref. lines PE	24
Reference scan mode	GRE

#### **Resolution - Filter Image**

Distortion Corr.	Off
Prescan Normalize	Off

#### **Resolution - Filter Rawdata**

Raw filter	Off
Elliptical filter	Off
Hamming	Off

#### **Geometry - Common**

Slice group	1
Slices	96
Dist. factor	0 %
Position	L0.0 A8.7 H9.5 mm
Orientation	T > C-15.0
Phase enc. dir.	A >> P
FoV read	192 mm
FoV phase	100.0 %
Slice thickness	1.50 mm
TR	1600 ms
Multi-slice mode	Interleaved
Series	Interleaved
Multi-band accel. factor	4

### Geometry - AutoAlign

Slice group	1
Position	L0.0 A8.7 H9.5 mm
Orientation	T > C-15.0
Phase enc. dir.	A >> P
AutoAlign	
Initial Position	L0.0 A8.7 H9.5
L	0.0 mm
Α	8.7 mm
Н	9.5 mm
Initial Rotation	0.00 deg
Initial Orientation	T > C
T > C	-15.0
> S	0.0

#### **Geometry - Saturation**

Fat suppr.	Fat sat.
Special sat.	None

### System - Miscellaneous

Positioning mode	FIX
Table position	Н
Table position	0 mm
MSMA	S - C - T
Sagittal	R >> L
Coronal	A >> P
Transversal	F >> H
Coil Combine Mode	Sum of Squares
Matrix Optimization	Off
AutoAlign	
Coil Select Mode	Default

### **System - Adjustments**

B0 Shim mode	Brain
B1 Shim mode	TrueForm
Confirm freq. adjustment	Off
Assume Dominant Fat	Off

# System - Adjustments

Assume Silicone	Off
Adjustment Tolerance	Auto

# **System - Adjust Volume**

! Position	R1.6 A5.4 H16.3 mm
! Orientation	T > C-14.8
! Rotation	90.00 deg
! R >> L	144 mm
! R >> L ! A >> P ! F >> H	179 mm
! F >> H	97 mm
Reset	Off

# System - Tx/Rx

Frequency 1H	297.145277 MHz
Correction factor	1
Gain	High
Img. Scale Cor.	1.000
Reset	Off
! Ref. amplitude 1H	250.000 V

# Physio - Signal1

1st Signal/Mode	None
TR	1600 ms
Multi-band accel. factor	4

# **BOLD**

GLM Statistics	Off
Dynamic t-maps	Off
Ignore meas. at start	0
Ignore after transition	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
Measurements	100
Delay in TR	0 ms
Multiple series	Off

# Sequence - Part 1

Introduction	Off
Contrasts	1
Flow comp.	No

# Sequence - Part 1

Multi-slice mode	Interleaved
Free echo spacing	Off
Echo spacing	0.72 ms
Bandwidth	1628 Hz/Px

# Sequence - Part 2

EPI factor	128
Gradient mode	Normal
RF spoiling	Off

# Sequence - Special

Excite pulse duration	7000 us
EPI noise scans	2
Single-band images	On
MB LeakBlock kernel	Off
MB dual kernel	On
MB RF phase scramble	On
SENSE1 coil combine	Off
Invert RO/PE polarity	Off
Force Maxwell corr.	Off
PF omits higher k-space	Off
Disable freq. update	Off
Force equal slice timing	Off
Online multi-band recon.	Online
FFT scale factor	1.00
Fat saturation FA	110.0 deg
GRE iPAT ref. FA	12.0 deg
Physio recording	Off
Triggering scheme	Standard

# \\USER\FMRIF\[XT-ID:01-RH-0001]Renzo\scannercomparison\rslh\_ep3d\_vaso\_nih5kk\_sagslab\_dual

TA: 10:22 PM: FIX Voxel size: 0.8×0.8×0.8 mmPAT: 3 Rel. SNR: 1.00 : nih5k

#### **Properties**

Prio recon	Off
Load images to viewer	On
Inline movie	Off
Auto store images	On
Load images to stamp segments	Off
Load images to graphic segments	Off
Auto open inline display	Off
Auto close inline display	Off
Start measurement without further	Off
preparation	
Wait for user to start	Off
Start measurements	Single measurement

#### **Routine**

Slab group	1
Slabs	1
Position	R29.4 A10.2 F13.9 mm
Orientation	Sagittal
Phase enc. dir.	A >> P
AutoAlign	
Slab Scale	-10 %
Slices per slab	36
FoV read	175 mm
FoV phase	100.0 %
Slice thickness	0.84 mm
TR 1	71.9 ms
TR 2	6102 ms
TE 1	23.40 ms
Averages	1
Filter	None
Coil elements	A32

#### **Contrast - Common**

TR 1	71.9 ms
TR 2	6102 ms
TE 1	23.40 ms
Multi-echo spacing	62.2 ms
Magn. preparation	Non-sel. HSN IR
TI 1	1554.2 ms
TI 2	4142.6 ms
Flip angle	57 deg
Fat suppr.	Fat sat.
Magn. Prep. Shots	1

### **Contrast - Dynamic**

Averages	1
Averaging mode	Short term
Reconstruction	Magn./Phase
Measurements	100
Pause after meas.	0.0 s

#### **Resolution - Common**

FoV read	175 mm
FoV phase	100.0 %
Slice thickness	0.84 mm
Base resolution	206
Phase resolution	100 %
Slice resolution	100 %
Phase partial Fourier	6/8
Slice partial Fourier	Off

#### **Resolution - Common**

#### **Resolution - iPAT**

PAT mode	CAIPIRINHA
Acc. factor PE	1
Ref. lines PE	63
Acc. factor 3D	3
Ref. lines 3D	36
CAIPI 3D Shift	1
Reference Scan Mode	EPI/separate
CAIPI Mode (tooltip)	Skipped-CAIPI
Total PAT factor	3

#### **Resolution - Filter Image**

Image Filter	Off
Distortion Corr.	Off
Prescan Normalize	Off
Normalize	Off
B1 filter	Off

#### **Resolution - Filter Rawdata**

Raw filter	Off	
Elliptical filter	Off	

#### **Geometry - Common**

Slab group	1
Slabs	1
Position	R29.4 A10.2 F13.9 mm
Orientation	Sagittal
Phase enc. dir.	A >> P
Slab Scale	-10 %
Slices per slab	36
FoV read	175 mm
FoV phase	100.0 %
Slice thickness	0.84 mm
TR 1	71.9 ms
TR 2	6102 ms

### Geometry - AutoAlign

Slab group	1
Position	R29.4 A10.2 F13.9 mm
Orientation	Sagittal
Phase enc. dir.	A >> P
AutoAlign	
Initial Position	R29.4 A10.2 F13.9
R	29.4 mm
Α	10.2 mm
F	13.9 mm
Initial Rotation	0.00 deg
Initial Orientation	Sagittal

#### **Geometry - Saturation**

Saturation mode	Standard
Fat suppr.	Fat sat.

### **System - Miscellaneous**

Positioning mode	FIX
Table position	Н
Table position	0 mm
MSMA	S - C - T

### System - Miscellaneous

Sagittal	R >> L
Coronal	A >> P
Transversal	F >> H
Coil Combine Mode	Sum of Squares
Save uncombined	Off
Matrix Optimization	Off
AutoAlign	
Coil Select Mode	Default

# **System - Adjustments**

B0 Shim mode	Brain
B1 Shim mode	TrueForm
Confirm freq. adjustment	Off
Assume Dominant Fat	Off
Assume Silicone	Off
Adjustment Tolerance	Auto

# System - Adjust Volume

! Position	R26.3 A6.7 H13.1 mm
! Orientation	T > C-8.4
! Rotation	90.00 deg
! R >> L	57 mm
! A >> P	179 mm
! F >> H	97 mm
Reset	Off

# System - Tx/Rx

Frequency 1H	297.145277 MHz
Correction factor	1
Gain	Low
Img. Scale Cor.	1.000
Reset	Off
! Ref. amplitude 1H	215.000 V

# Sequence - Part 1

Introduction	On
Dimension	3D
Reordering	Linear
Contrasts	1
Echo spacing	1.18 ms
Bandwidth	934 Hz/Px

# Sequence - Part 2

EPI factor	52
Segmentation	3
RF pulse type	Normal
Gradient mode	Fast
Excitation	Slab-sel.
RF spoiling	On
Turbo factor	36

# Sequence - Special

PATRef FA	3 deg
RF duration	2000 us
RF BWT product	8
Ernst T1	1200 ms
PATRef prep. shots	10
Volume dummy shots	0
Dummy Measurements	0
ETL per RTEB	1
Invert PE	Off
Min. TE if PF	On
Echo Time Shift	On
Ramp Sampling	On

# Sequence - Special

NORDIC	On
SVDPC	Off
Sym VASO	Off
Dual-pol. EPI	On
Invert RO	Off
Invert 3D	Off
Disable PF reco	Off
Disable PF reco	Off
Save sampling	Off
PE VComp	Off
Water Exc.	-none-
External PC	per Series
Saturation RF	per Shot
FIDNavs	-none-
EPI rise time factor	1.10
Mosaic DICOMs	On
Modify Ice Config	On
G-factor map	Off
GRAPPA Regularization	50000 10^-6
HSN RF power scale	3.00
Inversion Delay	250 ms
Relaxation Delay	0 ms
Var. FA /MAGEC	4

Mode Off	
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# \\USER\FMRIF\[XT-ID:01-RH-0001]Renzo\scannercomparison\rslh\_ep3d\_vaso\_nih5kk\_sagslab\_dual -gfactor

TA: 0:18 PM: FIX Voxel size: 0.8×0.8×0.8 mmPAT: 3 Rel. SNR: 1.00 : nih5k

#### **Properties**

Prio recon	Off
Load images to viewer	On
Inline movie	Off
Auto store images	On
Load images to stamp segments	Off
Load images to graphic segments	Off
Auto open inline display	Off
Auto close inline display	Off
Start measurement without further	Off
preparation	
Wait for user to start	Off
Start measurements	Single measurement

#### Routine

Slab gı	roup	1
Slal	os	1
Pos	sition	R29.4 A10.2 F13.9 mm
Orie	entation	Sagittal
Pha	se enc. dir.	A >> P
AutoAl	ign	
Slab S	cale	-10 %
Slices	per slab	36
FoV re	ad	175 mm
FoV ph	nase	100.0 %
Slice th	nickness	0.84 mm
TR 1		71.9 ms
TR 2		6102 ms
TE 1		23.40 ms
Averag	jes	1
Filter		None
Coil ele	ements	A32

#### **Contrast - Common**

TR 1	71.9 ms
TR 2	6102 ms
TE 1	23.40 ms
Multi-echo spacing	62.2 ms
Magn. preparation	Non-sel. HSN IR
TI 1	1554.2 ms
TI 2	4142.6 ms
Flip angle	57 deg
Fat suppr.	Fat sat.
Magn. Prep. Shots	1

#### **Contrast - Dynamic**

Averages	1
Averaging mode	Short term
Reconstruction	Magn./Phase
Measurements	1

#### **Resolution - Common**

FoV read	175 mm
FoV phase	100.0 %
Slice thickness	0.84 mm
Base resolution	206
Phase resolution	100 %
Slice resolution	100 %
Phase partial Fourier	6/8
Slice partial Fourier	Off

#### **Resolution - Common**

Interpolatio	n Off	
interpolatio	ı Oli	

#### **Resolution - iPAT**

PAT mode	CAIPIRINHA
Acc. factor PE	1
Ref. lines PE	63
Acc. factor 3D	3
Ref. lines 3D	36
CAIPI 3D Shift	1
Reference Scan Mode	EPI/separate
CAIPI Mode (tooltip)	Skipped-CAIPI
Total PAT factor	3

#### **Resolution - Filter Image**

Image Filter	Off
Distortion Corr.	Off
Prescan Normalize	Off
Normalize	Off
B1 filter	Off

#### **Resolution - Filter Rawdata**

Raw filter	Off	
Elliptical filter	Off	

### **Geometry - Common**

Slab group	1
Slabs	1
Position	R29.4 A10.2 F13.9 mm
Orientation	Sagittal
Phase enc. dir.	A >> P
Slab Scale	-10 %
Slices per slab	36
FoV read	175 mm
FoV phase	100.0 %
Slice thickness	0.84 mm
TR 1	71.9 ms
TR 2	6102 ms

### Geometry - AutoAlign

Slab group	1
Position	R29.4 A10.2 F13.9 mm
Orientation	Sagittal
Phase enc. dir.	A >> P
AutoAlign	
Initial Position	R29.4 A10.2 F13.9
R	29.4 mm
Α	10.2 mm
F	13.9 mm
Initial Rotation	0.00 deg
Initial Orientation	Sagittal

#### **Geometry - Saturation**

Saturation mode	Standard
Fat suppr.	Fat sat.

### System - Miscellaneous

Positioning mode	FIX
Table position	Н

### System - Miscellaneous

Table position	0 mm
MSMA	S-C-T
Sagittal	R >> L
Coronal	A >> P
Transversal	F >> H
Coil Combine Mode	Sum of Squares
Save uncombined	Off
Matrix Optimization	Off
AutoAlign	
Coil Select Mode	Default

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Confirm freq. adjustment	Off
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RF pulse type	Normal
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# Sequence - Special

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PATRef prep. shots	10
Volume dummy shots	0
Dummy Measurements	0
ETL per RTEB	1
Invert PE	Off
Min. TE if PF	On

# Sequence - Special

Echo Time Shift	On	
Ramp Sampling	On	
NORDIC	On	
SVDPC Off		
Sym VASO	Off	
Dual-pol. EPI	On	
Invert RO	Off	
Invert 3D	Off	
Disable PF reco	Off	
Disable PF reco	Off	
Save sampling	Off	
PE VComp	Off	
Water Exc.	ater Excnone-	
External PC	per Series	
Saturation RF	per Shot	
FIDNavs	-none-	
EPI rise time factor 1.10		
Mosaic DICOMs	On	
Modify Ice Config	On	
G-factor map	On	
GRAPPA Regularization	50000 10^-6	
HSN RF power scale	3.00	
Inversion Delay	250 ms	
Relaxation Delay	0 ms	
Var. FA /MAGEC	4	

Mode	Off