Table of contents

\\MARTINOS DEVELOPER HUBER 3rd_order_shim_tests_with_Gunjan PNS ep2d_pace_tra_p3_s2_orig ep3d_ES0.8

TA: 7:35 min Coil Selection: Auto Voxel Size: 1.4×1.4×1.4 mm³ Acc:: 3 Rel. SNR: 1.00

Properties

| Start measurement without further preparation | On |
|-----------------------------------------------|--------------------|
| Wait for User to Start | Off |
| Start measurements | Single Measurement |
| Prio Recon | Off |
| Auto Open Inline Display | Off |
| Auto Close Inline Display | Off |
| Load Images to MR View&GO | On |
| Auto Store Images | On |
| Disable auto transfer to PACS | Off |
| Load Images to Stamp Segments | On |
| Load Images to Graphic Segments | On |
| Graphic segment | Default |
| Inline Movie | Off |

Routine

| Slice Group | 1 |
|---------------------|--------------|
| Slices | 84 |
| Distance Factor | 0 % |
| Position | Isocenter |
| Orientation | Transversal |
| Phase Encoding Dir. | A >> P |
| Phase Oversampling | 0 % |
| FOV Read | 224 mm |
| FOV Phase | 100.0 % |
| Slice Thickness | 1.4 mm |
| TR | 4320.0 ms |
| TE | 22.00 ms |
| Averages | 1 |
| Concatenations | 1 |
| AutoAlign | Head > Brain |
| · | |

Contrast - Common

| TR | 4320.0 ms |
|--------------------|----------------|
| TE | 22.00 ms |
| MTC | Off |
| Flip Angle | 90 deg |
| Fat-Water Contrast | Fat Saturation |
| Reconstruction | Magnitude |

Contrast - Dynamic

| Dynamic Mode | Standard |
|--------------|----------|
| Measurements | 100 |
| Delay in TR | 0.00 ms |

Resolution - Common

| FOV Read | 224 mm |
|-----------------|---------|
| FOV Phase | 100.0 % |
| Slice Thickness | 1.4 mm |
| Base Resolution | 160 |

Resolution - Common

| Phase Resolution | 100 % |
|------------------|-------|
| Interpolation | Off |

Resolution - Acceleration

| Acceleration Mode | GRAPPA |
|------------------------|--------------|
| Reference Scans | EPI/Separate |
| Acceleration Factor PE | 3 |
| Reference Lines PE | 36 |
| Phase Partial Fourier | Off |

Resolution - Filter

| Raw Filter | Off |
|-----------------------|-----|
| Elliptical Filter | Off |
| Hamming | Off |
| Distortion Correction | Off |
| Normalize | Off |

Geometry - Common

| Slice Group | 1 |
|---------------------|-------------|
| Slices | 84 |
| Distance Factor | 0 % |
| Position | Isocenter |
| Orientation | Transversal |
| Phase Encoding Dir. | A >> P |
| Phase Oversampling | 0 % |
| FOV Read | 224 mm |
| FOV Phase | 100.0 % |
| Slice Thickness | 1.4 mm |
| TR | 4320.0 ms |
| Multi-Slice Mode | Interleaved |
| Series | Interleaved |
| Concatenations | 1 |

Geometry - AutoAlign

| Slice Group | 1 |
|---------------------|--------------|
| Position | Isocenter |
| Orientation | Transversal |
| Phase Encoding Dir. | A >> P |
| AutoAlign | Head > Brain |
| Initial Position | Isocenter |
| L | 0.0 mm |
| P | 0.0 mm |
| н | 0.0 mm |
| Initial Orientation | Transversal |
| Initial Rotation | 0.00 deg |

Geometry - Saturation

| Special Saturation None |
|-------------------------|
|-------------------------|

Geometry - Tim Planning Suite

| Set-n-Go Protocol | Off |
|-------------------|------|
| Table Position | 0 mm |
| Table Position | Н |

System - Miscellaneous

| Coil Selection | Auto Coil Select |
|---------------------|------------------|
| Radial Sorting | Off |
| MSMA | S - C - T |
| Sagittal | R >> L |
| Coronal | A >> P |
| Transversal | F >> H |
| Coil Combination | Adaptive Combine |
| Matrix Optimization | Off |
| Coil Focus | Flat |

System - Adjustments

| Adjustment Strategy | Standard |
|-----------------------|----------|
| BO Shim | Brain |
| B1 Shim | TrueForm |
| Adjustment Tolerance | Auto |
| Adjust with Body Coil | Off |
| Confirm Frequency | Never |
| Assume Silicone | Off |

System - Adjust Volume

| Position | Isocenter |
|------------------|-------------|
| Orientation | Transversal |
| Rotation | 0.00 deg |
| A >> P R >> L | 224 mm |
| R >> L | 224 mm |
| F >> H | 118 mm |
| Reset | Off |

System - pTx

| B1 Shim | TrueForm |
|------------|----------|
| Excitation | Standard |

System - Tx/Rx

| Frequency 1H | 297.118824 MHz |
|---------------------|----------------|
| ? Ref. Amplitude 1H | 0.000 V |
| Reset | Off |
| Image Scaling | 1.000 |

Physio - Signal

| 1st Signal/Mode | None |
|-----------------|-----------|
| TR | 4320.0 ms |
| Log Signals | Off |
| Concatenations | 1 |

BOLD

| GLM Statistics | Off | |
|-------------------------|-----|--|
| Ignore Meas. at Start | 0 | |
| Ignore After Transition | 0 | |
| Model Transition States | On | |

BOLD

| 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 | On |
| Spatial Filter | Off |
| Measurements | 100 |
| Delay in TR | 0.00 ms |

Sequence - Part 1

| Sequence Name | epfid |
|-------------------|------------|
| Excitation | Standard |
| RF Pulse Type | Fast |
| Gradient Mode | Fast |
| Bandwidth | 1838 Hz/Px |
| Echo Spacing | 0.63 ms |
| Free Echo Spacing | Off |
| EPI Factor | 160 |

Sequence - Part 2

| Introduction | On |
|--------------|----|

Sequence - Assistant

| SAK Assistant Off | SAR Assistant | Off |
|-------------------|---------------|-----|
|-------------------|---------------|-----|

\\MARTINOS DEVELOPER\HUBER\3rd_order_shim_tests_with_Gunjan\PNS\ep3d_ES0.8

TA: 43 sec Coil Selection: Auto Voxel Size: 0.9×0.9×0.9 mm³ Acc:: 3 Rel. SNR: 1.00

Properties

| Start measurement without further | On |
|-----------------------------------|--------------------|
| preparation | |
| Wait for User to Start | Off |
| Start measurements | Single Measurement |
| Prio Recon | Off |
| Auto Open Inline Display | Off |
| Auto Close Inline Display | Off |
| Load Images to MR View&GO | On |
| Auto Store Images | On |
| Disable auto transfer to PACS | Off |
| Load Images to Stamp Segments | Off |
| Load Images to Graphic Segments | Off |
| Graphic segment | Default |
| Inline Movie | Off |

Routine

| Slab Group | 1 |
|---------------------|--------------------|
| Slabs | 1 |
| Position | R1.9 P6.7 H32.0 mm |
| Orientation | Transversal |
| Phase Encoding Dir. | A >> P |
| Slices per Slab | 36 |
| Slice Oversampling | 0.0 % |
| FOV Read | 172 mm |
| FOV Phase | 100.0 % |
| Slice Thickness | 0.90 mm |
| TR | 100.0 ms |
| Vol. TR | 3600.0 ms |
| TE 1 | 30.00 ms |
| Averages | 1 |
| Multi-echo Shots | 1 |
| AutoAlign | |

Contrast - Common

| TR | 100.0 ms |
|--------------------|-----------|
| Vol. TR | 3600.0 ms |
| TE 1 | 30.00 ms |
| Multi-echo spacing | 40.60 ms |
| MTC | Off |
| Flip Angle | 18 deg |
| Fat-Water Contrast | Standard |
| Contrasts | 1 |
| Reconstruction | Magnitude |

Contrast - Dynamic

| Dynamic Mode | Standard |
|---------------------|----------|
| Measurements | 10 |
| Pause after Meas. 1 | 0.0 s |
| Pause after Meas. 2 | 0.0 s |
| Pause after Meas. 3 | 0.0 s |
| Pause after Meas. 4 | 0.0 s |

Contrast - Dynamic

| Pause after Meas. 5 | 0.0 s |
|---------------------|--------|
| Pause after Meas. 6 | 0.0 s |
| Pause after Meas. 7 | 0.0 s |
| Pause after Meas. 8 | 0.0 s |
| Pause after Meas. 9 | 0.0 s |
| Reordering | Linear |

Resolution - Common

| FOV Read | 172 mm |
|------------------|---------|
| FOV Phase | 100.0 % |
| Slice Thickness | 0.90 mm |
| Base Resolution | 192 |
| Phase Resolution | 100 % |
| Slice Resolution | 100 % |
| Interpolation | Off |

Resolution - Acceleration

| Acceleration Mode | CAIPIRINHA |
|------------------------|--------------|
| CAIPIRINHA Mode | Free |
| Reference Scans | EPI/Separate |
| Acceleration Factor PE | 1 |
| Reference Lines PE | 63 |
| Acceleration Factor 3D | 3 |
| Reference Lines 3D | 36 |
| Reordering Shift 3D | 1 |
| Phase Partial Fourier | 6/8 |
| Slice Partial Fourier | Off |

Resolution - Filter

| Raw Filter | Off |
|-----------------------|-----|
| Elliptical Filter | Off |
| Distortion Correction | Off |
| Normalize | Off |
| Image Filter | Off |

Geometry - Common

| Slab Group | 1 |
|---------------------|--------------------|
| Slabs | 1 |
| Position | R1.9 P6.7 H32.0 mm |
| Orientation | Transversal |
| Phase Encoding Dir. | A >> P |
| Slices per Slab | 36 |
| Slice Oversampling | 0.0 % |
| FOV Read | 172 mm |
| FOV Phase | 100.0 % |
| Slice Thickness | 0.90 mm |
| TR | 100.0 ms |
| Vol. TR | 3600.0 ms |
| Multi-echo Shots | 1 |

Geometry - AutoAlign

| Slab Group | 1 |
|---------------------|--------------------|
| Position | R1.9 P6.7 H32.0 mm |
| Orientation | Transversal |
| Phase Encoding Dir. | A >> P |
| AutoAlign | |
| Initial Position | R1.9 P6.7 H32.0 |
| R | 1.9 mm |
| Р | 6.7 mm |
| Н | 32.0 mm |
| Initial Orientation | Transversal |
| Initial Rotation | 0.00 deg |

Geometry - Saturation

| Saturation Mode | Standard |
|-----------------|----------|
| | |

Geometry - Tim Planning Suite

| Set-n-Go Protocol | Off |
|-------------------|------|
| Table Position | 0 mm |
| Table Position | Н |

System - Miscellaneous

| Coil Selection | Auto Coil Select |
|---------------------|------------------|
| Radial Sorting | Off |
| MSMA | S - C - T |
| Sagittal | R >> L |
| Coronal | A >> P |
| Transversal | F >> H |
| Coil Combination | Adaptive Combine |
| Matrix Optimization | Off |
| Coil Focus | Flat |

System - Adjustments

| - J | |
|-----------------------|----------|
| Adjustment Strategy | Standard |
| B0 Shim | Brain |
| B1 Shim | TrueForm |
| Adjustment Tolerance | Auto |
| Adjust with Body Coil | Off |
| Confirm Frequency | Never |
| Assume Silicone | Off |

System - Adjust Volume

| ! Position | R1.9 P0.0 H6.2 mm |
|---------------|-------------------|
| ! Orientation | Transversal |
| ! Rotation | 0.00 deg |
| ! A >> P | 150 mm |
| ! R >> L | 175 mm |
| ! F >> H | 49 mm |
| Reset | Off |

System - pTx

| B1 Shim | TrueForm |
|------------|-----------|
| Excitation | Slab-sel. |

System - Tx/Rx

| Frequency 1H | 297.118824 MHz |
|---------------------|----------------|
| ? Ref. Amplitude 1H | 0.000 V |
| Reset | Off |
| Image Scaling | 1.000 |

Sequence - Part 1

| Sequence Name | ep 256d7d0 |
|---------------|------------|
| Dimension | 3D |
| Excitation | Slab-sel. |
| RF Pulse Type | Normal |
| Gradient Mode | Fast |
| Reordering | Linear |
| Bandwidth | 1370 Hz/Px |
| Echo Spacing | 0.83 ms |
| Segmentation | 3 |
| EPI Factor | 48 |

Sequence - Part 2

| Introduction | On |
|--------------|----|
| RF Spoiling | On |

Sequence - Special

| PAT ref. FA | 3 deg |
|-----------------------|--------------|
| RF duration | 2000 us |
| RF BWT product | 8 |
| Ernst T1 | 1200 ms |
| PATRef prep. shots | 10 |
| Volume dummy shots | 0 |
| Noise dummy shots | -1 |
| CHECK FLIP ANGLE! | On |
| Integrated PC | Off |
| Invert PE | Off |
| Min. TE w/ PF | On |
| Dual-polarity | On |
| Ramp Sampling | On |
| Ext. trigger/shot | Off |
| Water Exc. | -none- |
| Phase Correction | per Series |
| EPI rise time factor | 1.10 |
| G. spoil dephasing[1] | 0.0 pi |
| G. spoil dephasing[2] | 0.0 pi |
| G. spoil dephasing[3] | 0.0 pi |
| Modify Ice Config | On |
| G-factor map | Off |
| GRAPPA Regularization | 5000 /10^6 |
| Slab Scale | -10 % |
| RF spoil scheme | Conventional |
| | |

Sequence - Assistant

| SAR Assistant | Off | |
|---------------|-----|--|
| DAN ASSISTALL | OII | |