Phantom QA Results: 32 CH

Date: 05/15/2017

Dartmouth Brain Imaging Center (DBIC)

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<th>Measurement</th>
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<td>Signal-to-Noise Ratio (SNR) (fig 2)</td>
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<tr>
<td>Signal-to-Fluctuation-Noise ratio (SFNR) (fig 2)</td>
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<td>Radius of Decorrelation (RDC) (fig 3)</td>
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<td>Drift (fig 1)</td>
<td>0.28</td>
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<td>Percent Fluctuation (fig 1)</td>
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<td>Fourier analysis of the residuals (fig 2)</td>
<td>&lt;2</td>
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<td>Ghost Mean Percentage (fig 10)</td>
<td>2.38%</td>
<td>Better than the recommended level (3% &lt; ) in ref 2:</td>
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Table 1: Key measurements
Figure 1

Figure 2

result.xml: [percent fluct (trend removed), drift, driftfit] = [0.04, 0.28, 0.]

[mean, SNR, SFNR] = [1518.8, 238.1, 242.9]
Figure 3

Figure 4
Smoothness (FWHM) in mm - Y: [min mean max] = [2.372 2.429 2.512]

Figure 5

Smoothness (FWHM) in mm - Z: [min mean max] = [1.451 1.833 2.206]

Figure 6
Figure 7

Center of Mass in mm - X: \([\text{maxdisplacement drift}] = [0.017, 0.014]\)

Figure 8

Center of Mass in mm - Y: \([\text{maxdisplacement drift}] = [0.043, 0.029]\)
Figure 9

Center of Mass in mm - Z: [maxdisplacement drift] = [0.014 0.012]

Figure 10

Mean of ghost voxels as % of non-ghost [masked] mean
(ghostmean, brightghostmean) = (2.379, 6.505)
(lower is better)
Odd-even difference image

image min: -300, image max: 284

Figure 11
Mean image

Figure 12
Standard Deviation image

image min: 0, image max: 9.65241

Figure 13
SFNR image

image min: 0, image max: 959.416

Figure 14
### Acquisition parameters

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References:


3. [https://www.nitrc.org/projects/bxh_xcede_tools](https://www.nitrc.org/projects/bxh_xcede_tools)