

Stability analysis of

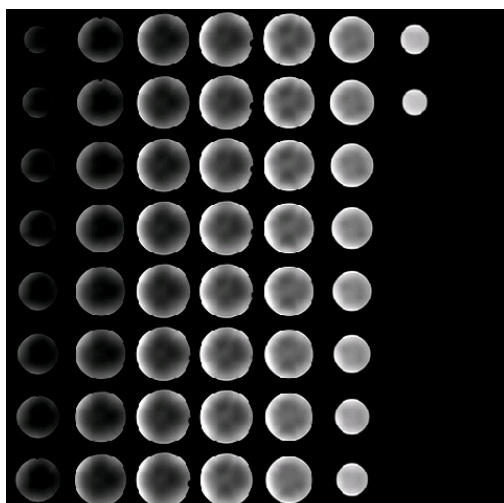
[1.3.46.670589.11.38023.5.0.31176.2021052617102799000](#) [1.3.46.670589.11.38023.5.0.5420.2021052617260126013.nii](#)

Coil:	Unknown
Acquisition Date:	26 May 2021
Acquisition Time:	17:26:01.250000
Institution:	Institute of Neurology
Manufacturer:	Philips
Model:	Achieva dStream
Repetition Time (s):	0
Echo Time (s):	0
number of Volumes:	100
Pixel Bandwidth (Hz/Px):	3396.0
Phantom Center of Mass:	30 (30.5), 32 (32), 28 (27.5)
Phantom type:	FUNSTAR
Phantom mean radius (mm):	84.74668135095321
Imaging protocol:	BIRN Stability
FUNSTAR Reporting version:	3.0.0

Calculated images

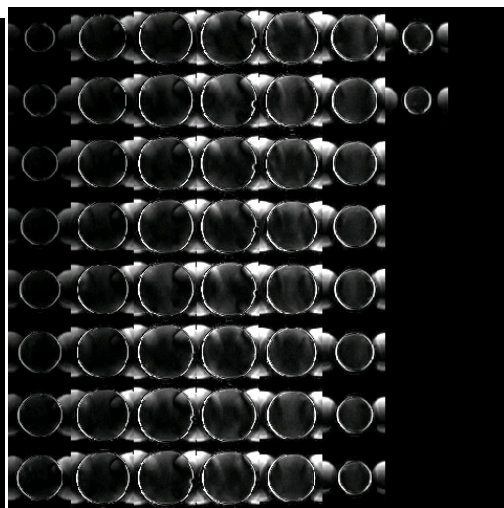
Mean over time:

mean = 1.966e+05, stddev = 6.811e+04, max = 4.56e+05,
min = 8.614e+04



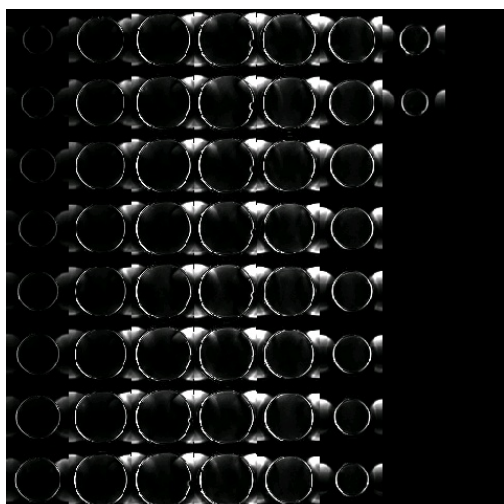
Standard deviation over time:

mean = 1311, stddev = 1228, max = 1.409e+04, min = 311.6



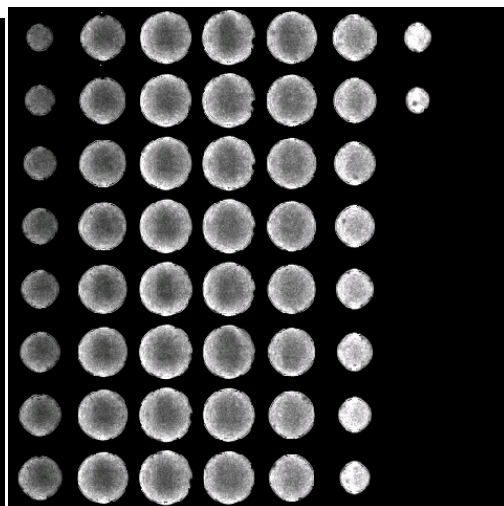
Variance over time:

mean = 3.225e+06, stddev = 1.03e+07, max = 1.984e+08,
min = 9.71e+04



SFNR:

mean = 315.4, stddev = 94.33, max = 856.3, min = 18.62

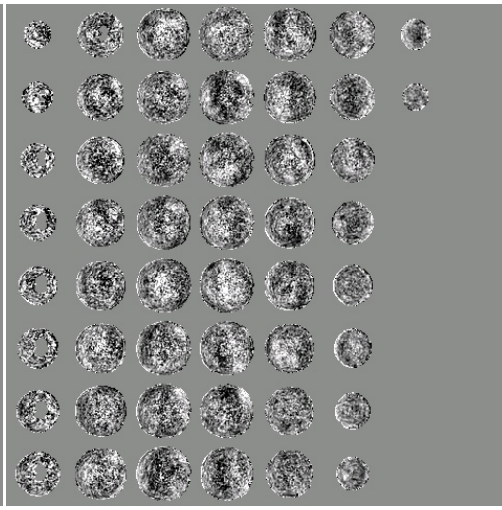
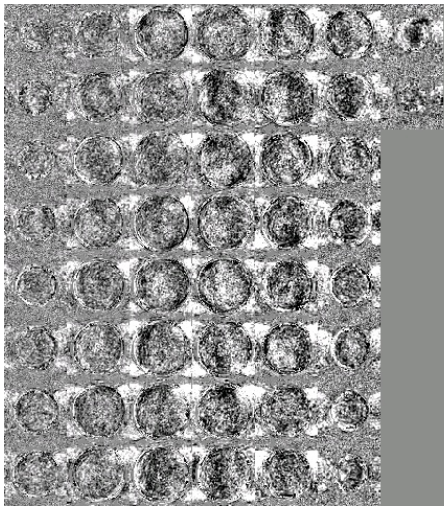


Even-odd difference:

mean = -1090, stddev = 6703, max = 8.954e+04, min =
-8.433e+04

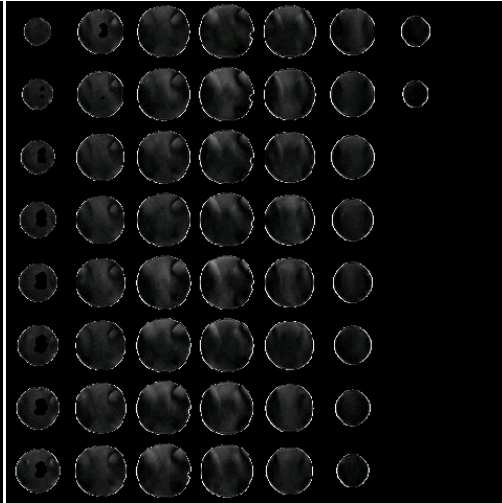
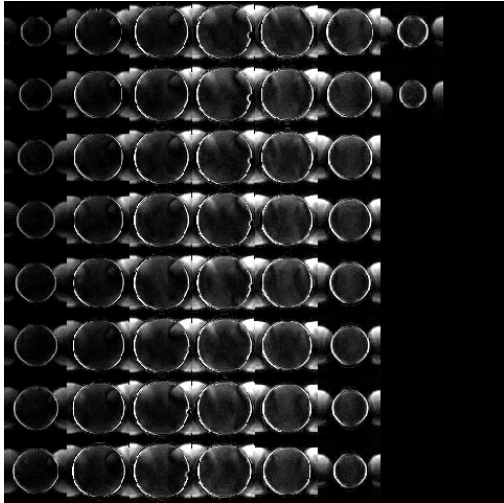
Even-odd difference percent:

mean = -0.5497, stddev = 3.743, max = 53.83, min = -47.01



Peak to peak:
 mean = 5861, stdev = 5187, max = 5.7e+04, min = 1301

Normalized % stdev over time:
 mean = 0.6997, stdev = 0.754, max = 13.89, min = 0.138



Central ROI Analysis

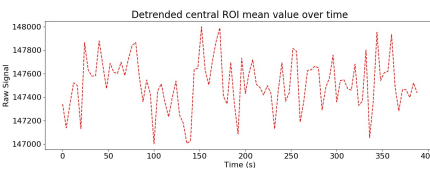
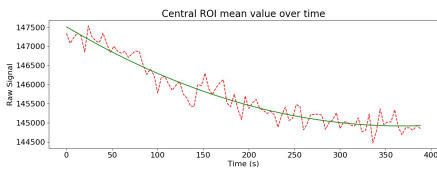
This is an analysis of the temporal fluctuation in a central voxels. A 21x21x1 voxel is automatically positioned at the center of gravity, and the average voxel value is plotted a function of time. Linear and quadratic terms are fit to the drift. The voxel statistics are reported with and without the drift removed.

Raw central ROI plot

mean = 1.457e+05
 stdev = 816 (0.5599%)
 p - p = 3058 (2.098%)
 percent drift = 1.78

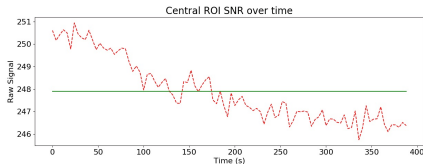
Detrended central ROI plot

detrended mean = 1.475e+05
 stdev = 221.2 (0.1499%)
 p - p = 996.9 (0.6758%)



Central ROI SNR over time

snr = 247.9

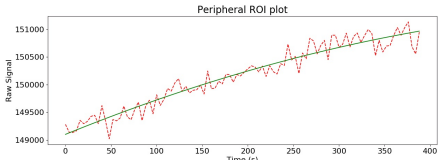


Peripheral ROI Analysis

This is an analysis of the image intensity and SFNR variation in a set of 3x3x1 voxels at a fixed radius from the center of the object in the central axial slice (0.8 of the distance from the center to the edge of the phantom). For phased array coils this is likely to have better signal to noise than an ROI at the center of the coil. The variation in SNR as a function of angle is also displayed.

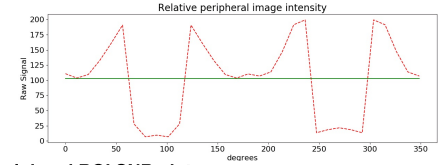
Raw peripheral ROI plot

mean = 1.502e+05
 stddev = 566.7 (0.38%)
 p - p = 2112 (1.41%)
 percent drift = 1.242



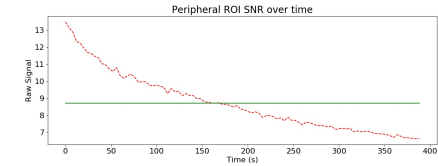
Peripheral ROI intensity plot

mean = 103
 p - p = 192.5 (186.9%)



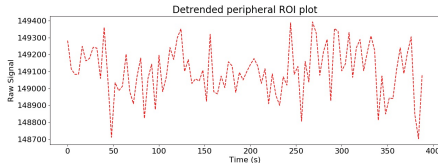
Peripheral ROI SNR plot

mean = 8.711



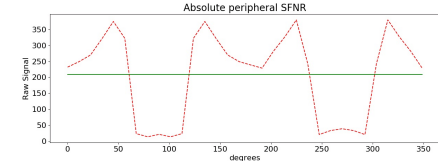
Detrended peripheral ROI plot

mean = 1.491e+05
 stddev = 148.9 (0.10%)
 p - p = 690.4 (0.46%)



Peripheral ROI SFNR plot

mean = 209.6
 p - p = 365.6 (174.5%)

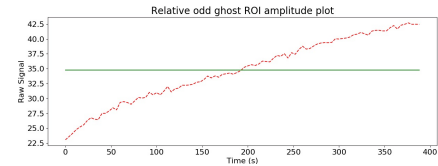


Ghost ROI Analysis

This is an analysis of the amplitude and time variation of image ghosts. Odd and even ghosts are assessed by calculating the ratio of the average signal in a 4x4x1 ghost roi to the average amplitude in the center of the phantom. The ghost roi is placed at the edge of the field of view in the phase encode direction, outside the phantom, and in the center (even ghost) or at the edge (odd ghost) of the phantom position in the readout direction.

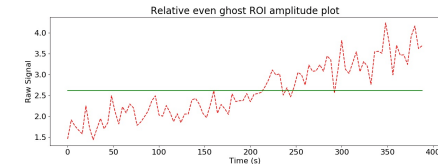
Odd ghost ROI plot

mean = 34.77, stddev = 5.353, min = 23.08, p - p = 42.7

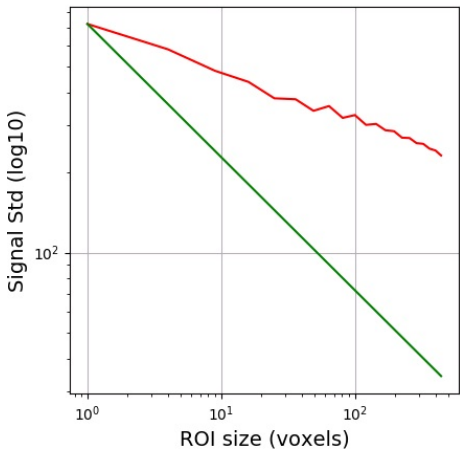


Even ghost ROI plot

mean = 2.613, stddev = 0.661, min = 1.436, p - p = 4.242



Weisskoff analysis



Region Size	Predicted Std Dev	Actual Std Dev	Ratio
1	0.0044	0.0044	1.0000
4	0.0022	0.0036	1.6011
9	0.0015	0.0030	2.0110
16	0.0011	0.0027	2.4256
25	0.0009	0.0023	2.6478
36	0.0007	0.0023	3.1452
49	0.0006	0.0021	3.3474
64	0.0006	0.0022	3.9795
81	0.0005	0.0020	4.0721
100	0.0004	0.0021	4.6317
121	0.0004	0.0019	4.7150
144	0.0004	0.0019	5.1813
169	0.0003	0.0018	5.3478
196	0.0003	0.0018	5.7004
225	0.0003	0.0017	5.8060
256	0.0003	0.0017	6.1558
289	0.0003	0.0016	6.2851
324	0.0002	0.0016	6.5835
361	0.0002	0.0016	6.6863
400	0.0002	0.0015	6.8823
441	0.0002	0.0015	6.9305

Radius of Decorrelation (RDC) = 3.03