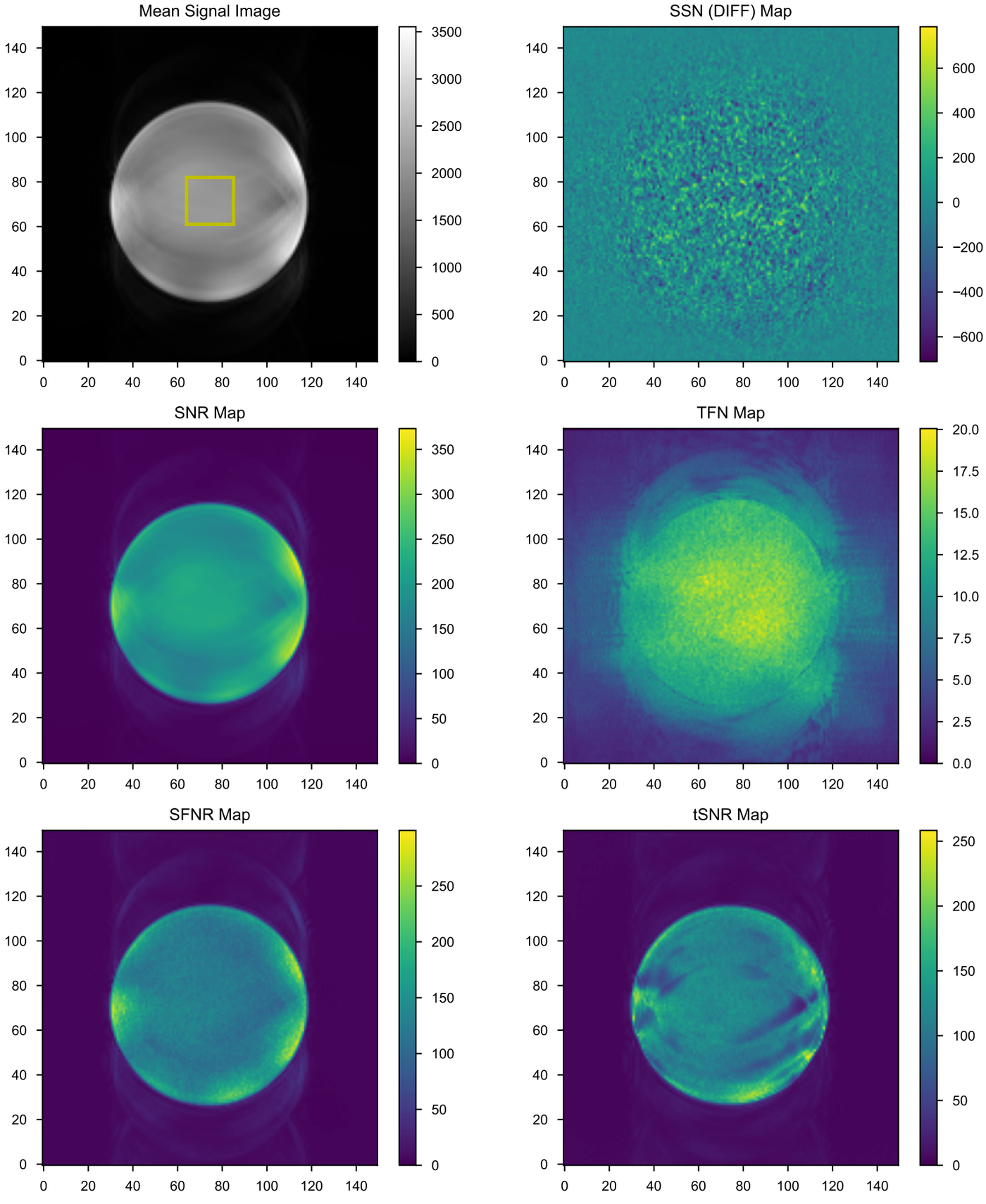
QA fMRI Report

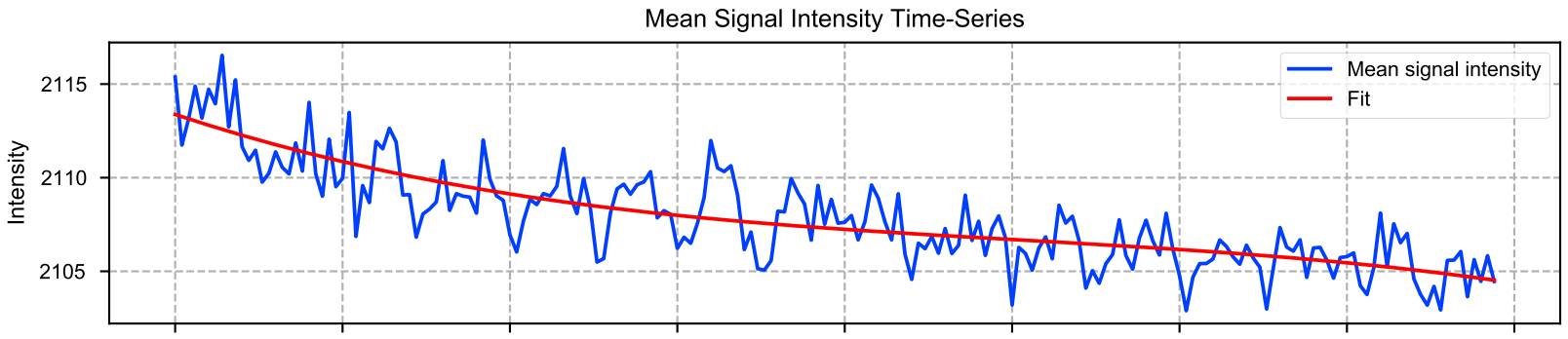
■ Information:
Date : 20231020
Coil : Nova 8Tx/32Rx Head

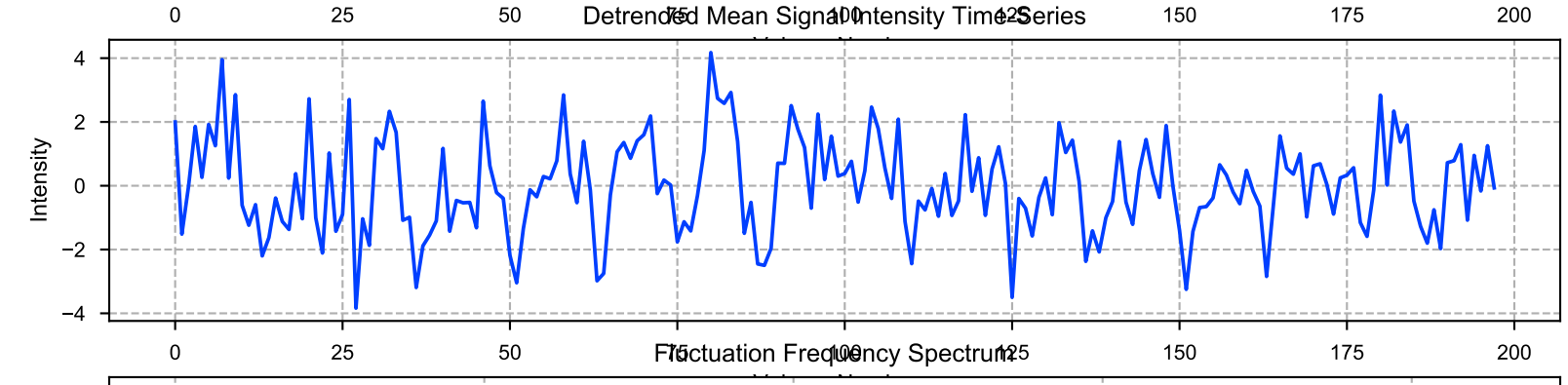
■ Basic analysis parameters:
Matrix Size : 150 x 150
Slices : 69
Resolution : 1.47 x 1.47 x 1.73 mm3
TR : 1159 ms
Ref Slice Num : 34
ROI width : 21
Total vols : 200
Analysis vols : 198

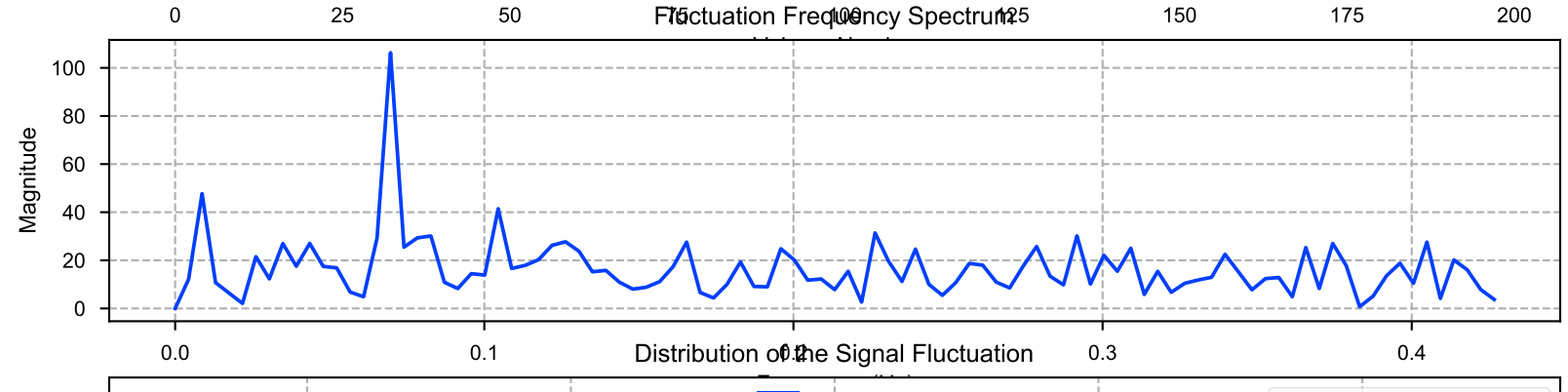
■ QA metrics
Mean Signal Intensity : 2107.840
Peak Frequency : 0.0697 Hz
STD of Detrended Signal : 1.488
SNR : 122.852
TFN : 16.544
SFNR : 127.859
tSNR : 122.647
Percent Fluctuation : 0.071 %
Drift : 0.647 %
Drift Fit : 0.420 %
RDC : 11.283 pixel
Spectrum MAD : 19.005
Ghost Rate : 3.663 %
Background Noise Rate : 1.306 %

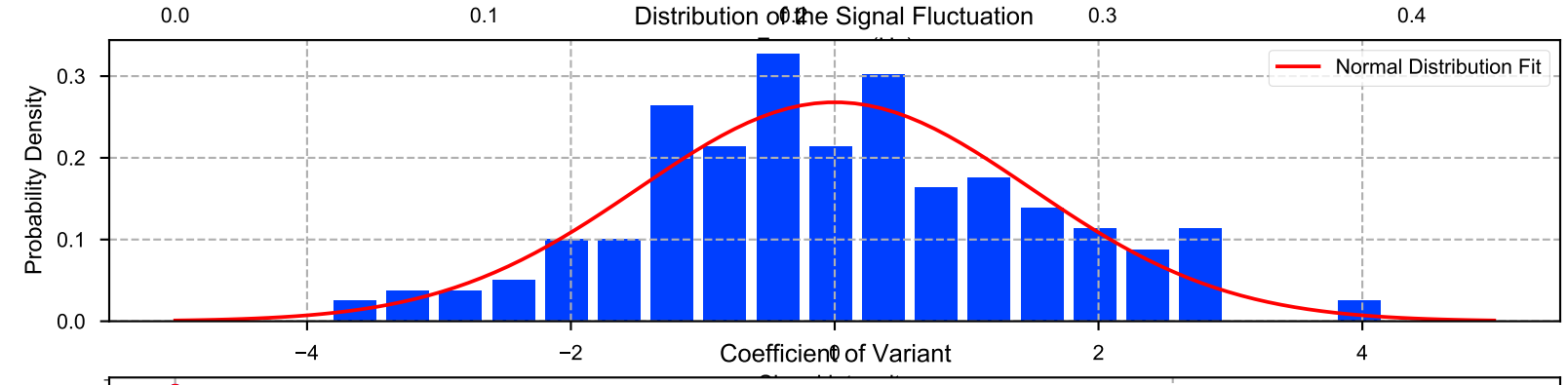
■ Notice
DIFF = Difference between Odd-volumes and Even-volumes
SNR = Signal-to-Noise Ratio
= (mean signal)/(standard deviation of DIFF)
TFN = standard deviation of detrended signal
SFNR = Signal-to-Fluctuation-Noise Ratio
= (mean signal)/(standard deviation of detrended signal)
tSNR = temporal Signal-to-Noise Ratio
= (mean signal)/(standard deviation of signal)
Percent Fluctuation = (STD of residuals of 2nd-fit-time-series)/(mean signal)
Drift = (max - min)/(mean signal)
Drift Fit = (maxfit - minfit)/(mean signal)
CV = Coefficient of VarianceRDC = Radius of DeCorrelation, CV(1)/CV(max)
MAD = Median Absolute Deviation = (max)/(median of Absolute Deviation)
Ghost Rate = (mean ghost)/(mean signal)
Background Rate = (mean background)/(mean signal)

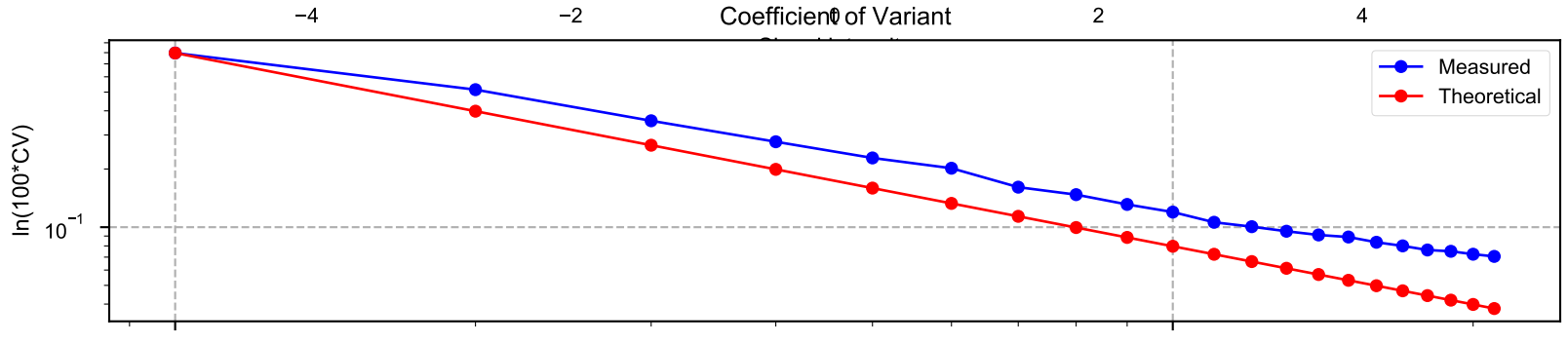

Mean Signal Image
SSN (DIFF) Map
SNR Map
TFN Map
SFNR Map
tSNR Map

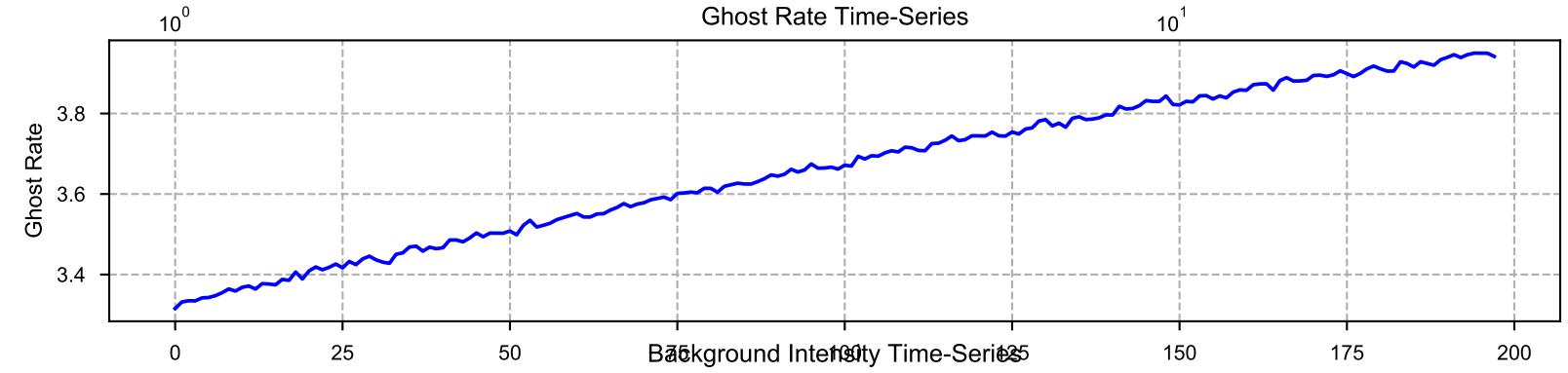

Mean Signal Intensity Time-Series
Mean signal intensity
Fit
Intensity
2115
2110
2105
0
25
50
75
100
125
150
175
200

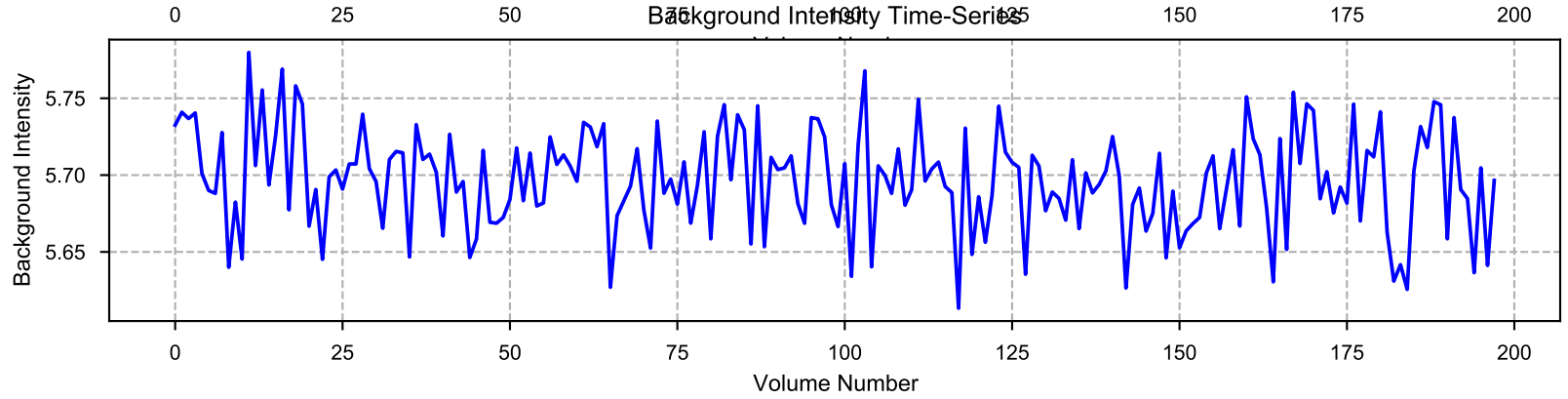

Detrended Mean Signal Intensity Time-Series
Intensity
4
2
0
−2
−4
0
25
50
75
100
125
150
175
200


Fluctuation Frequency Spectrum
Magnitude
100
80
60
40
20
0
0.0
0.1
0.2
0.3
0.4


Distribution of the Signal Fluctuation
Normal Distribution Fit
Probability Density
0.3
0.2
0.1
0.0
−4
−2
0
2
4


Coefficient of Variant
Measured
Theoretical
ln(100*CV)
10^{-1}
10^{0}
10^{1}


Ghost Rate Time-Series
Ghost Rate
3.8
3.6
3.4
0
25
50
75
100
125
150
175
200


Background Intensity Time-Series
Background Intensity
5.75
5.70
5.65
0
25
50
75
100
125
150
175
200
Volume Number