

ICA Component Rejection Report

REJECTION SUMMARY

Total Components: 19
Excluded: 3 components
Kept: 16 components

EXCLUDED COMPONENTS: ICA002, ICA009, ICA011

VARIANCE ANALYSIS

Total variance removed: 22.24%

Variance per excluded component:

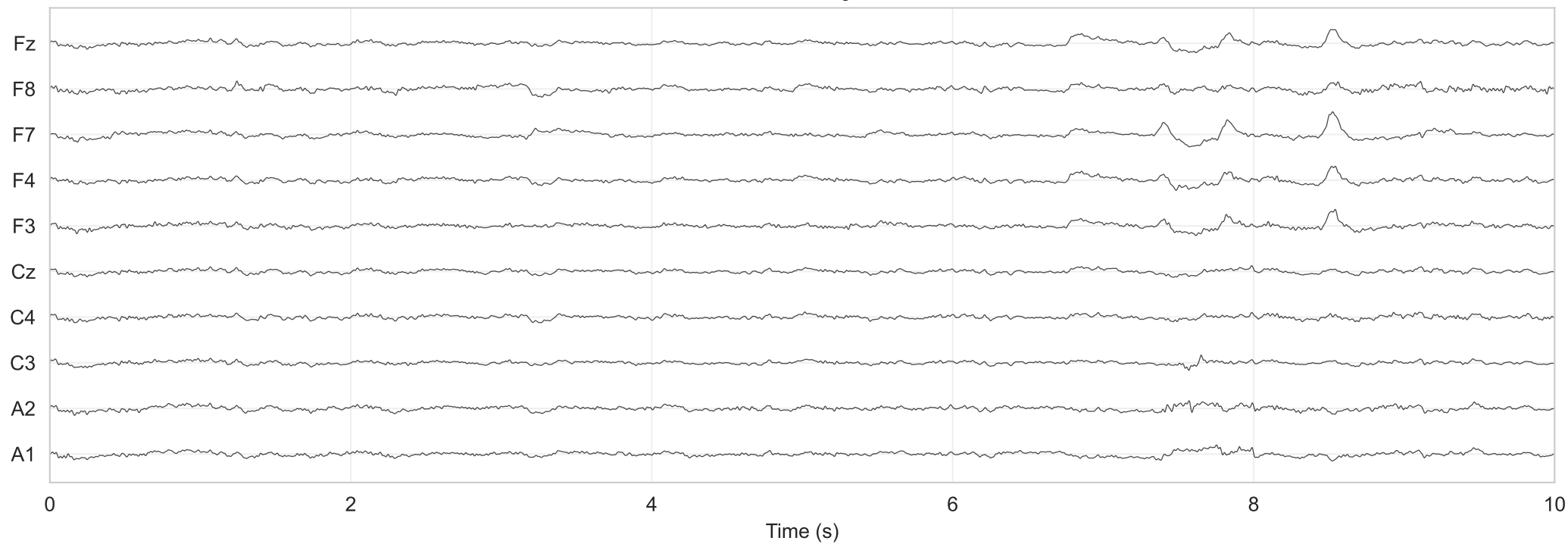
ICA002:	9.32%	(Rank # 1, Kurtosis: 164.18)
ICA009:	4.62%	(Rank #13, Kurtosis: 12.20)
ICA011:	8.30%	(Rank # 3, Kurtosis: 150.19)

ARTIFACT SIGNATURES

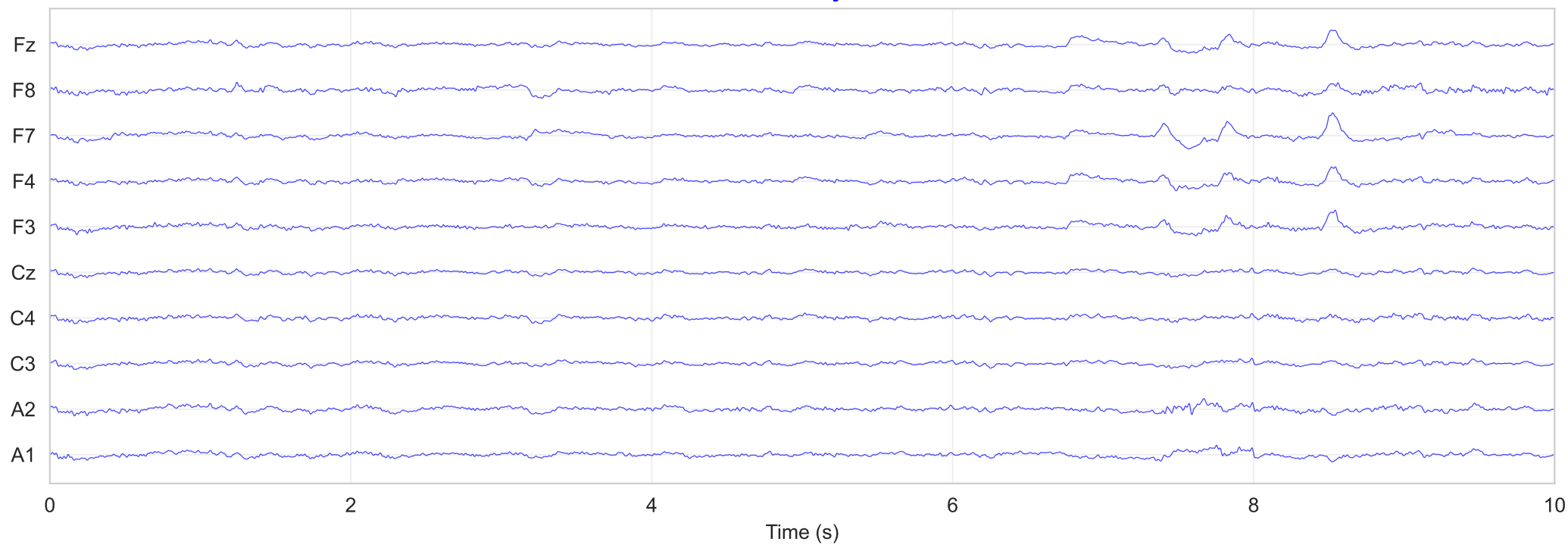
ICA002:	Strong artifact (very high kurtosis)
ICA009:	Possible artifact (moderate kurtosis)
ICA011:	Strong artifact (very high kurtosis)

EEG Data: Before and After ICA Artifact Rejection

Before ICA Rejection

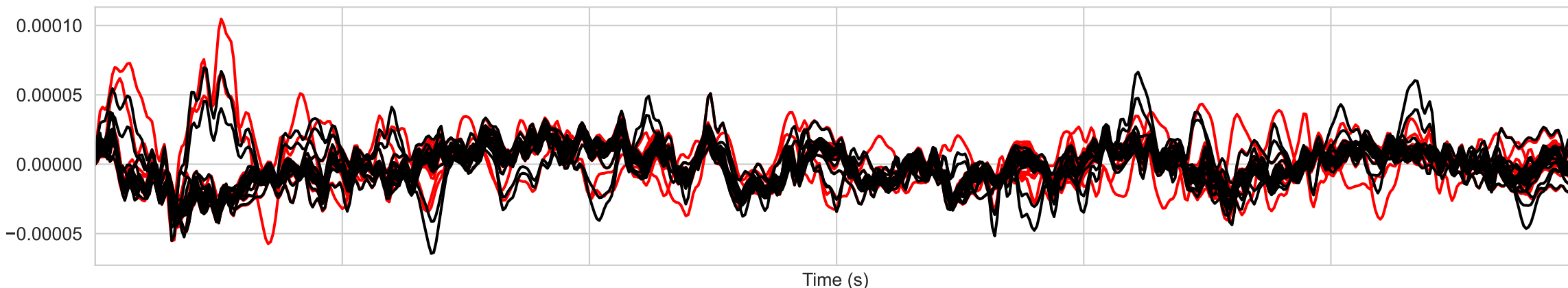


After ICA Rejection

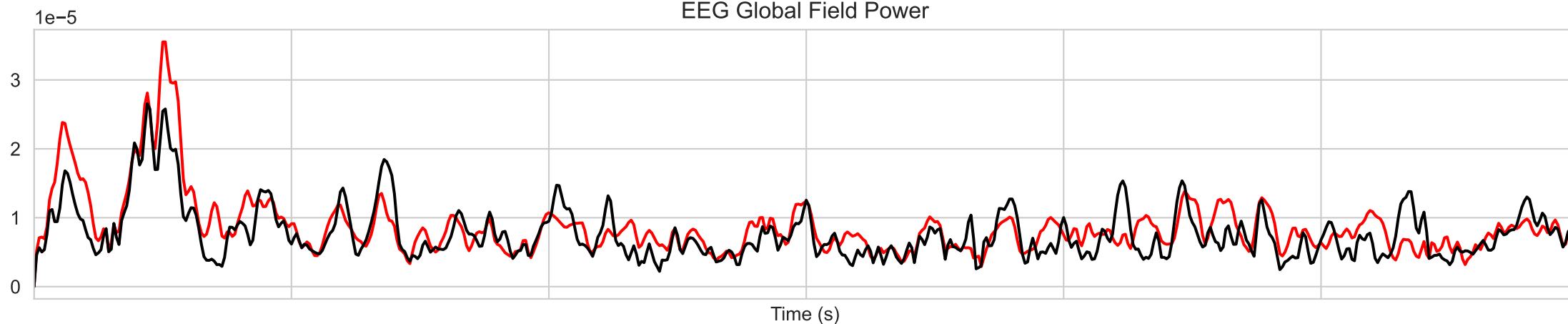


Overlay: Effect of Removing All Excluded Components (ICA002, ICA009, ICA011)

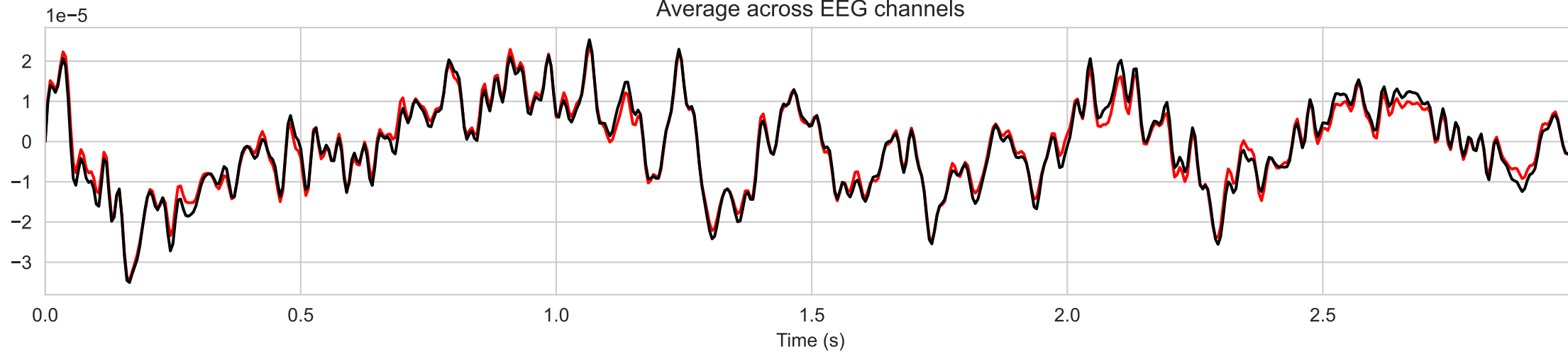
Raw EEG data



EEG Global Field Power

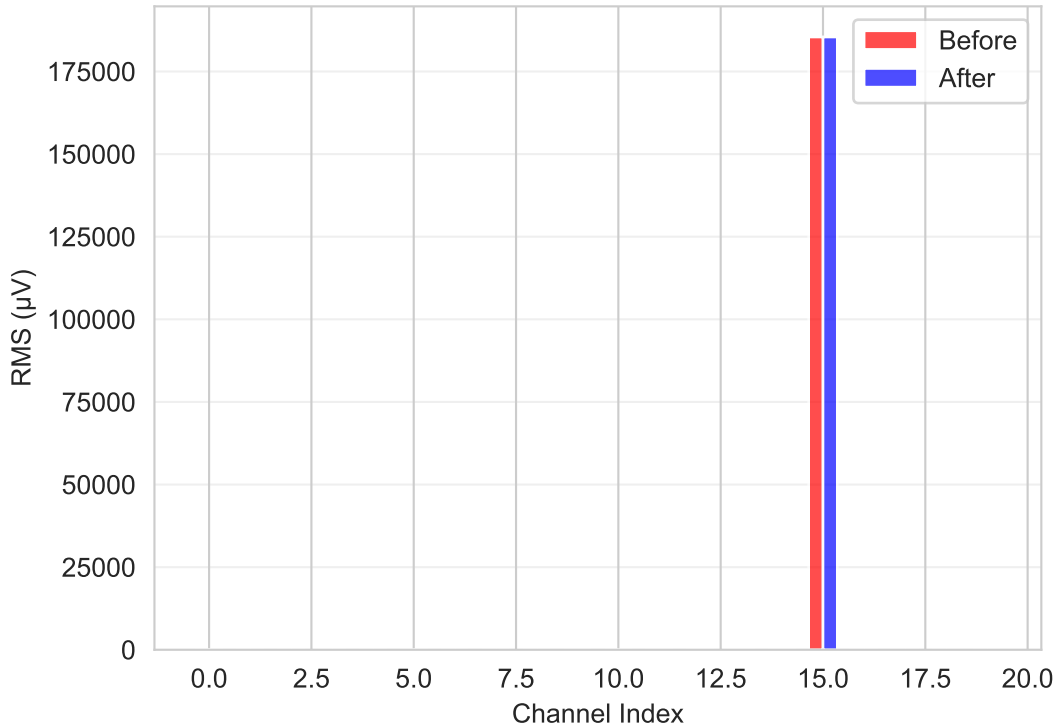


Average across EEG channels

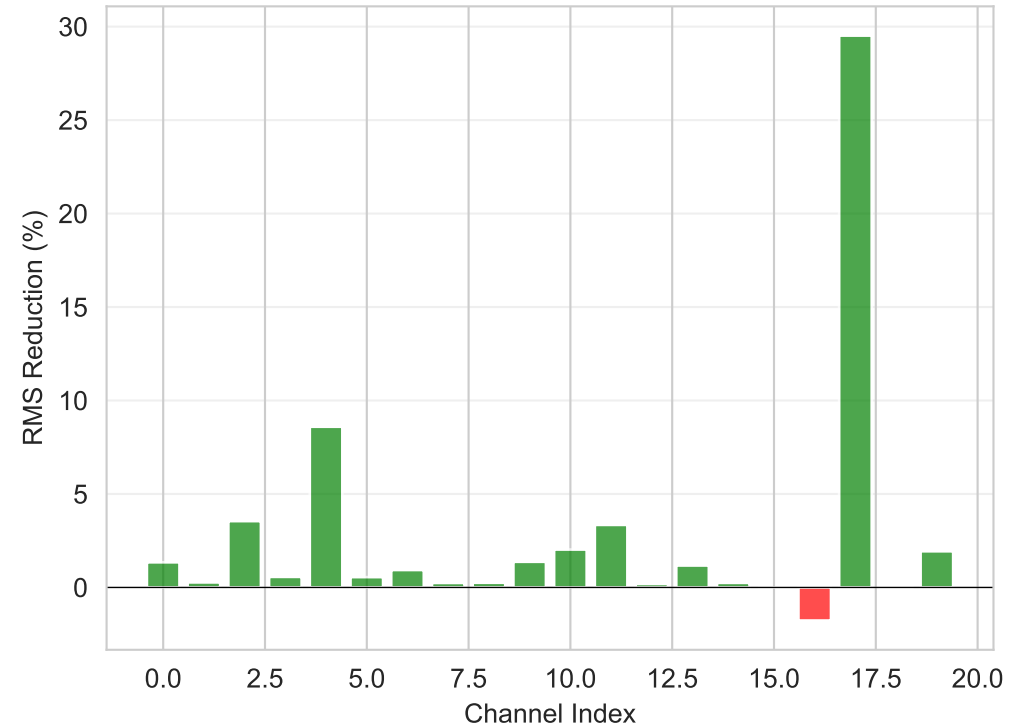


Signal Quality Metrics: Before vs After ICA

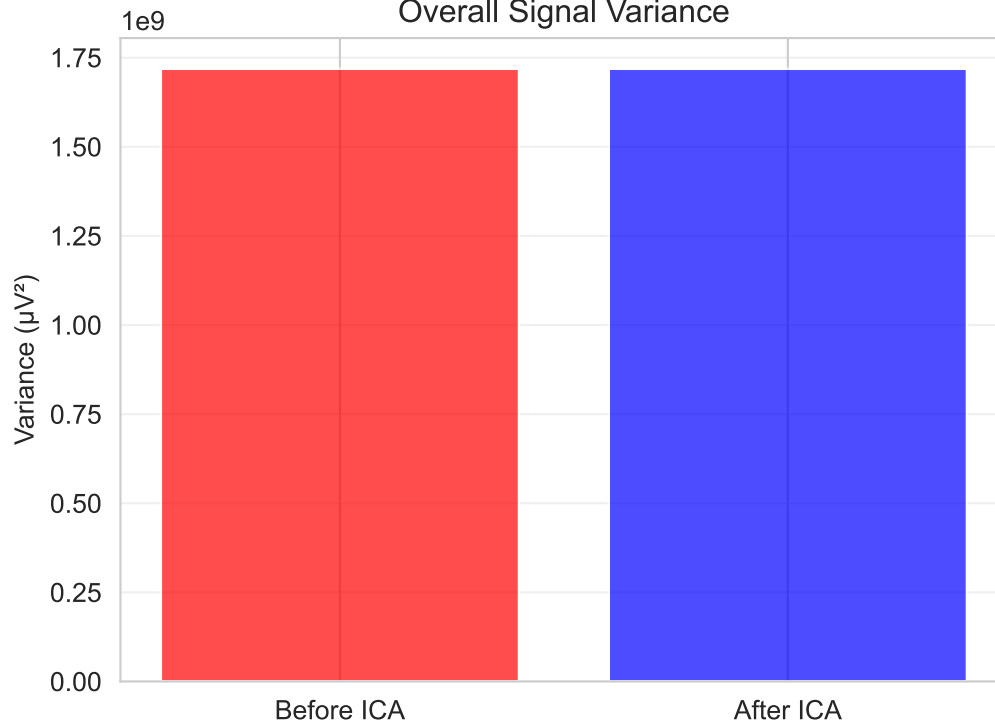
RMS Amplitude by Channel



Artifact Reduction by Channel



Overall Signal Variance



SIGNAL QUALITY METRICS

Before ICA Rejection:

Mean RMS: 9299.80 μV
Std RMS: 40408.97 μV
Variance: 1719151456.22 μV^2

After ICA Rejection:

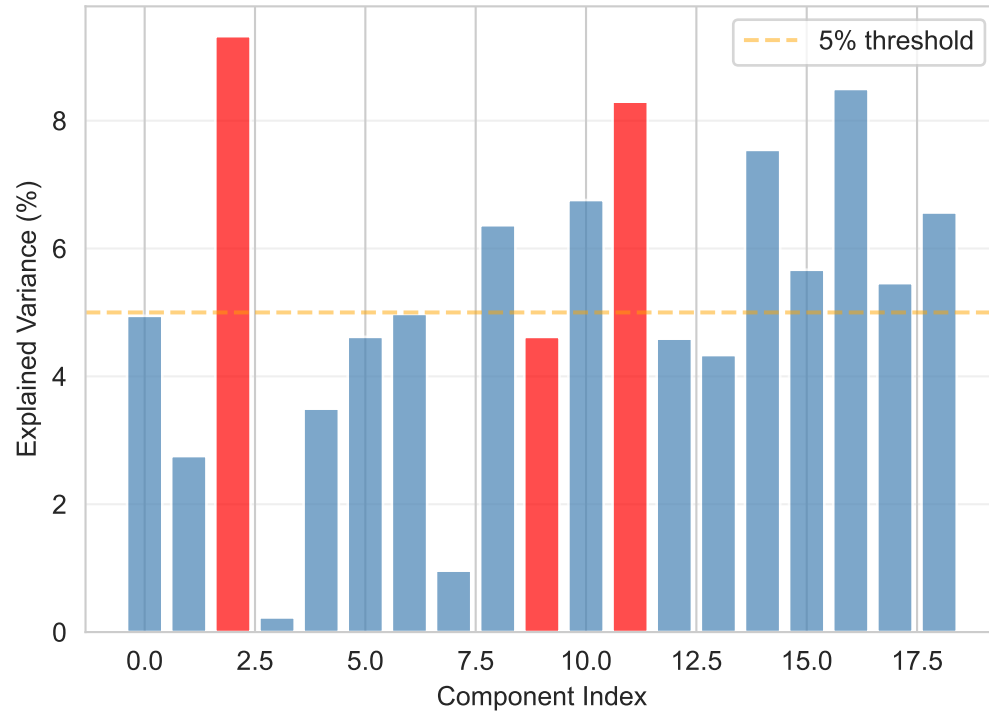
Mean RMS: 9297.96 μV
Std RMS: 40409.39 μV
Variance: 1719151120.30 μV^2

Overall Reduction:

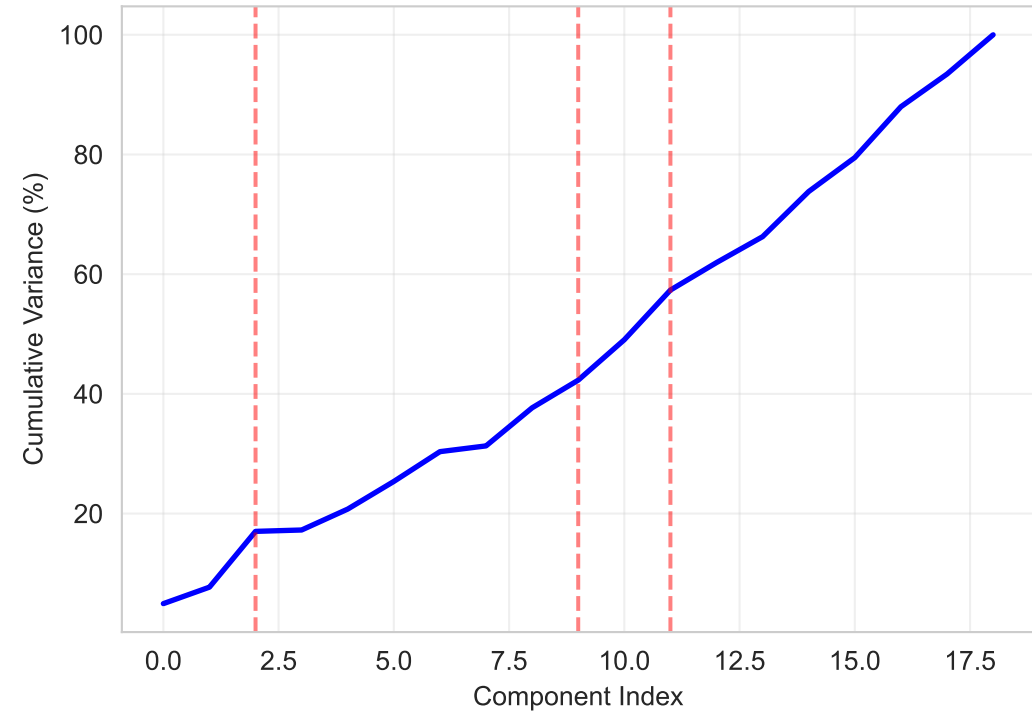
RMS reduction: 0.02%
Variance reduction: 0.00%

Variance Distribution Analysis

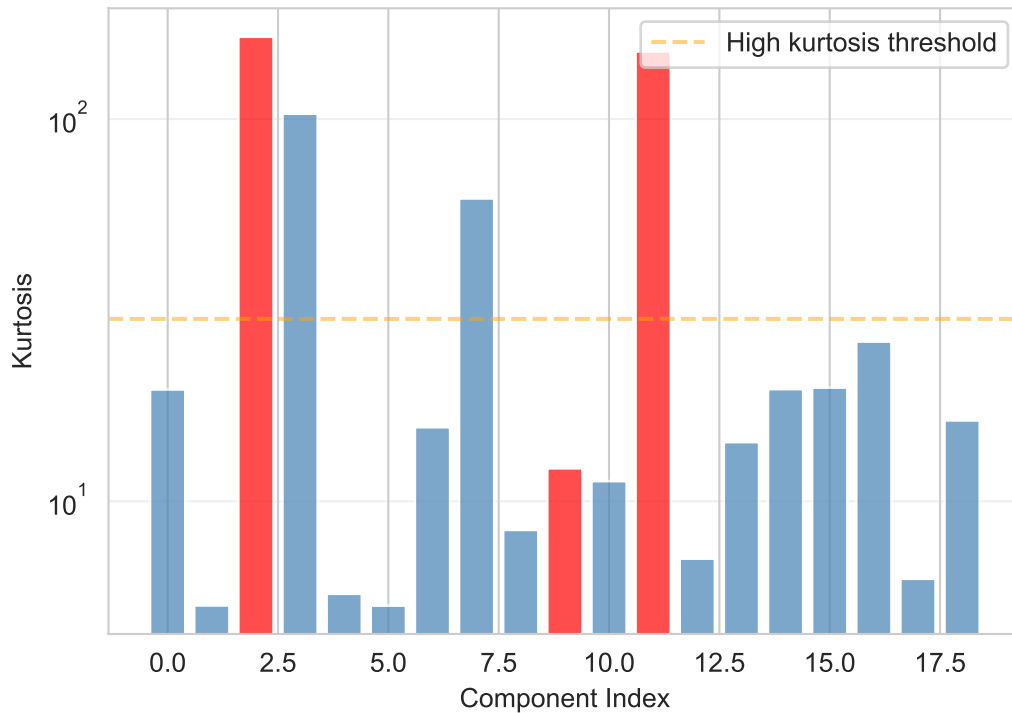
Variance by Component



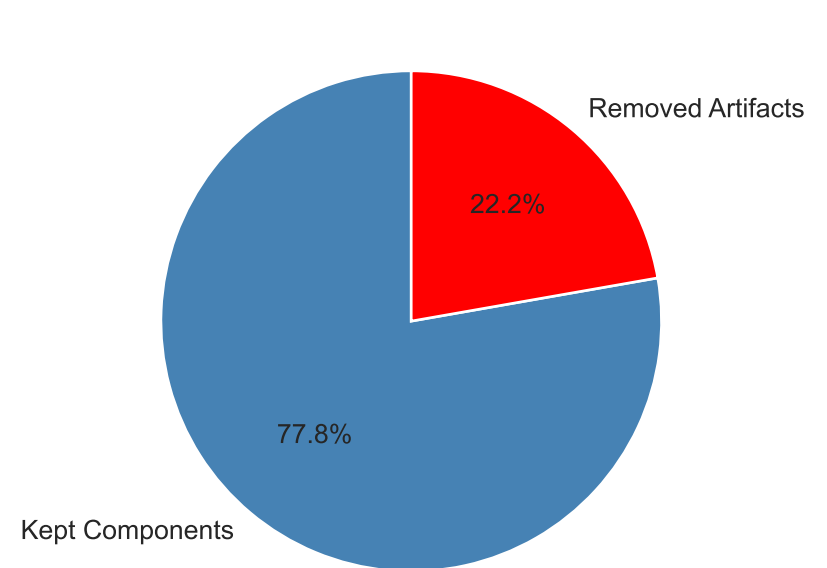
Cumulative Variance Explained



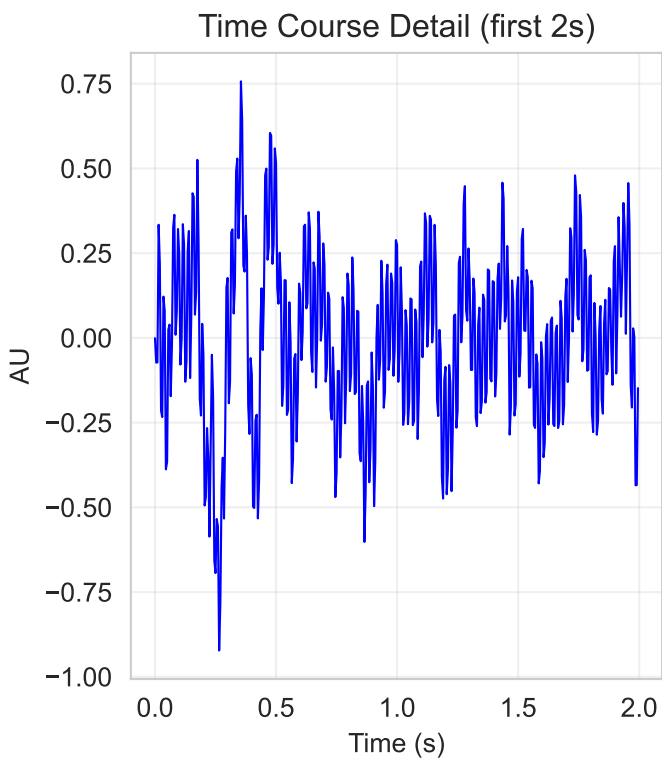
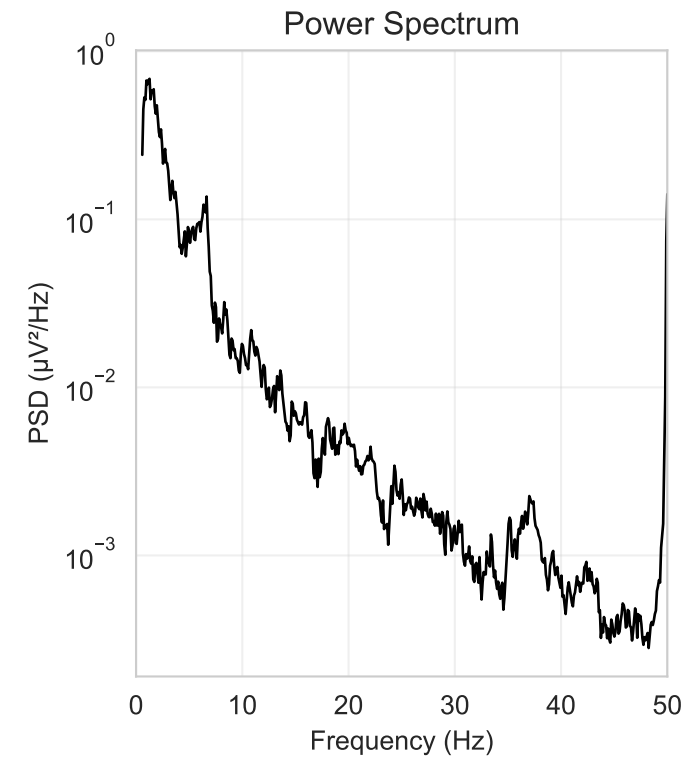
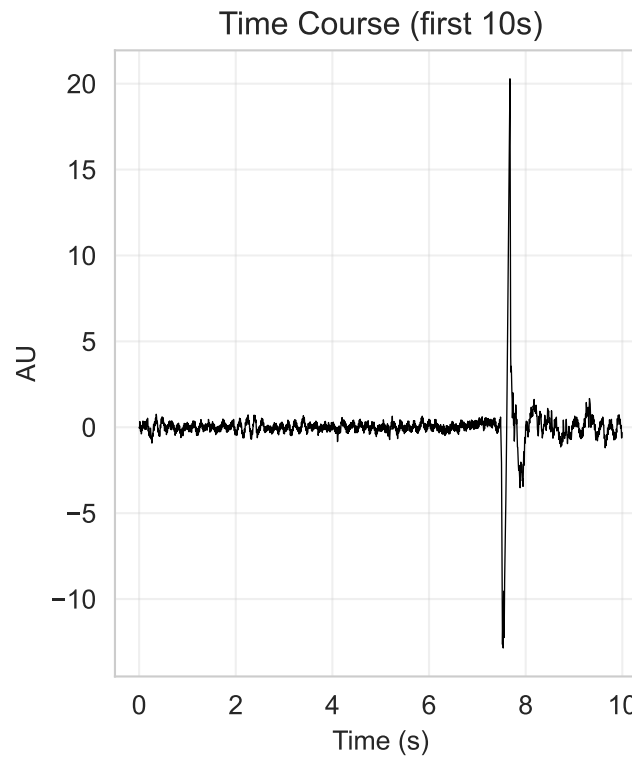
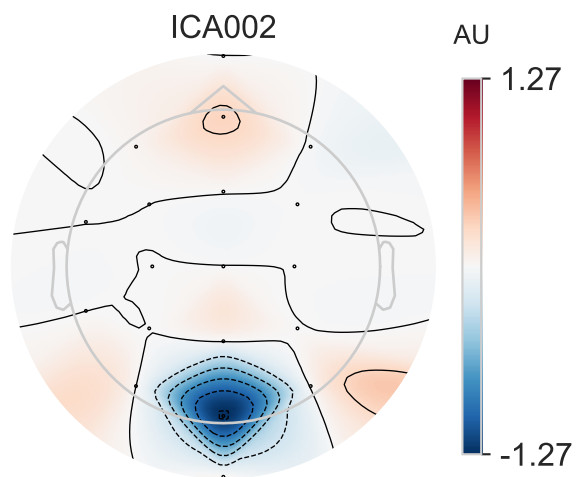
Kurtosis by Component



Variance Distribution



ICA002 - REJECTED COMPONENT



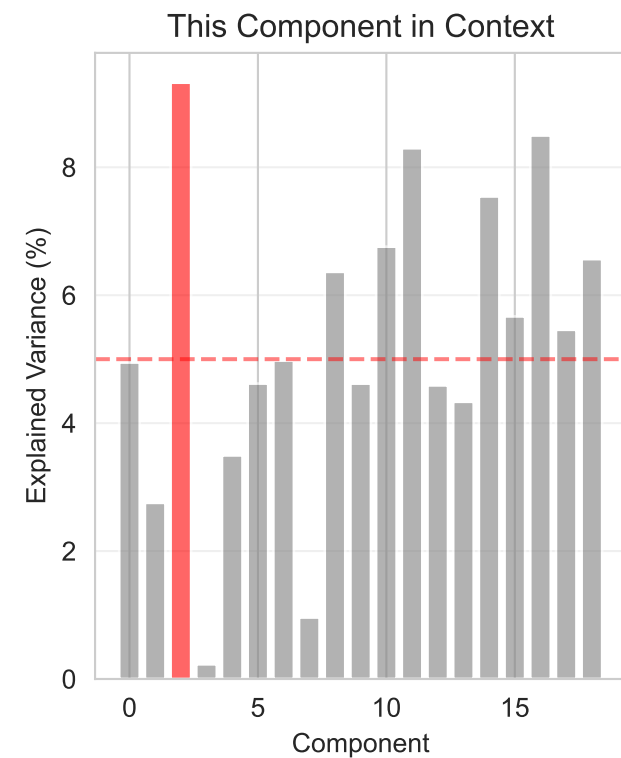
Component Statistics:

Mean: 0.001
Std: 1.326
Min: -33.441
Max: 48.168
Kurtosis: 164.180

Explained Variance: 9.32%
Rank by Variance: #1

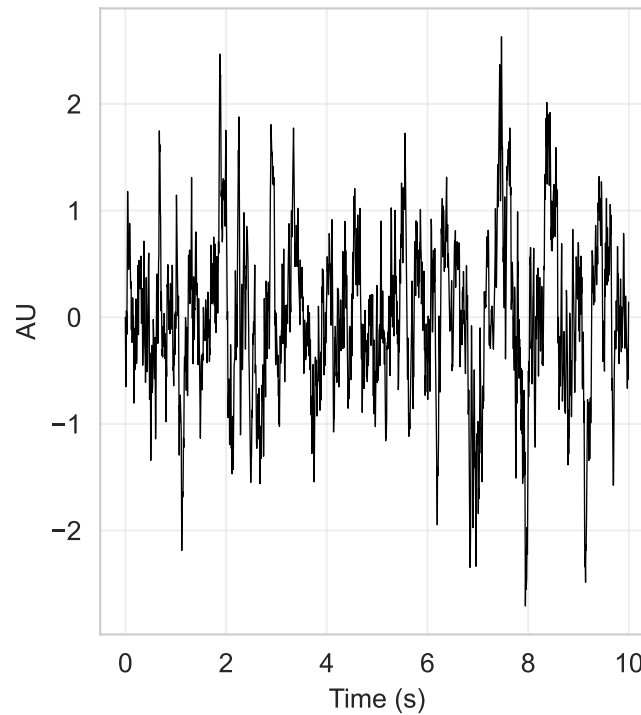
REJECTION RATIONALE:

- EXTREME artifact signature
- Likely eye blinks/movements

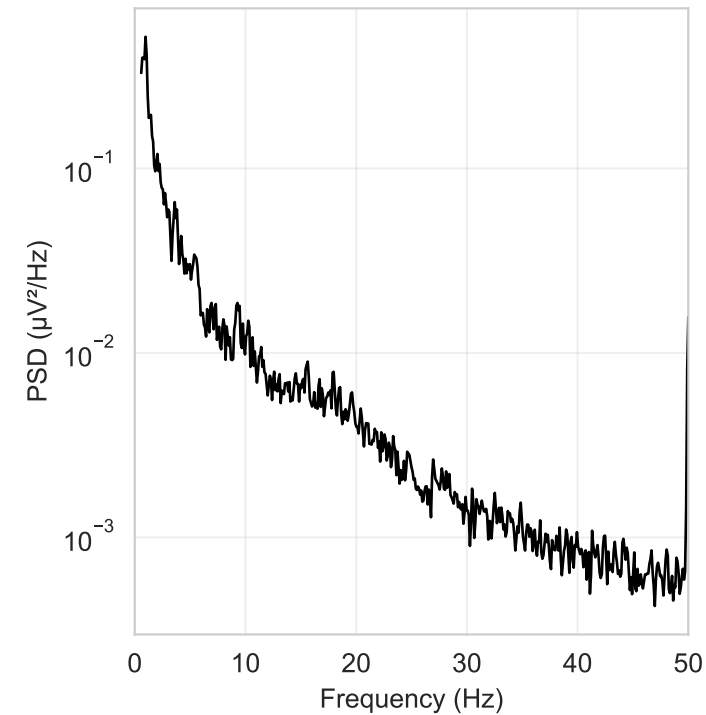


ICA009 - REJECTED COMPONENT

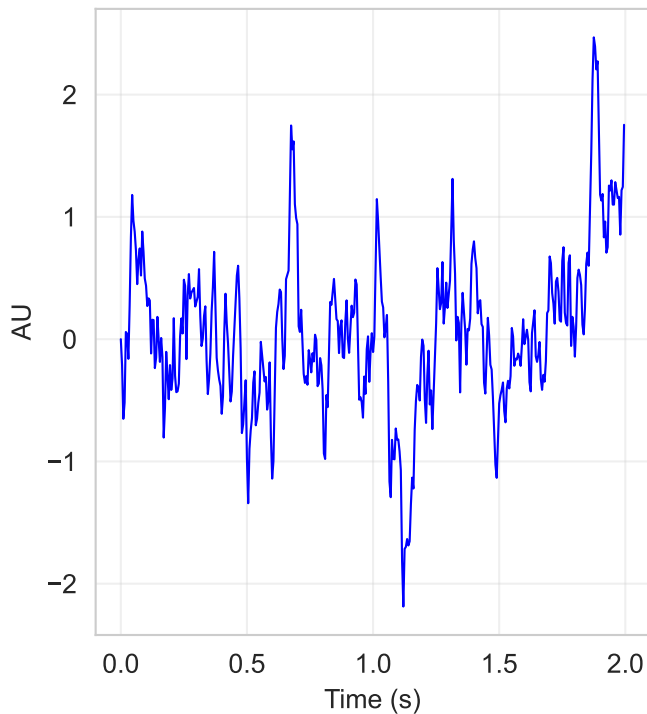
Time Course (first 10s)



Power Spectrum



Time Course Detail (first 2s)



Component Statistics:

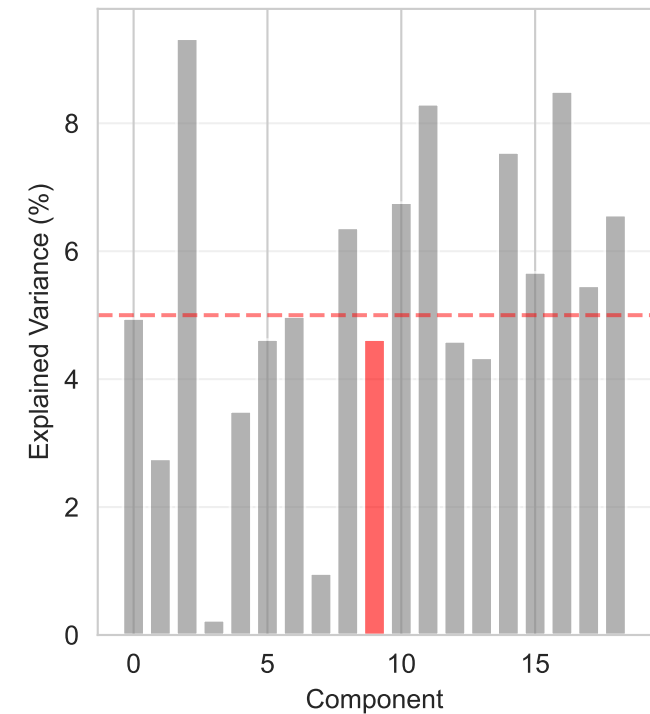
Mean: 0.001
Std: 0.933
Min: -10.123
Max: 9.388
Kurtosis: 12.199

Explained Variance: 4.62%
Rank by Variance: #13

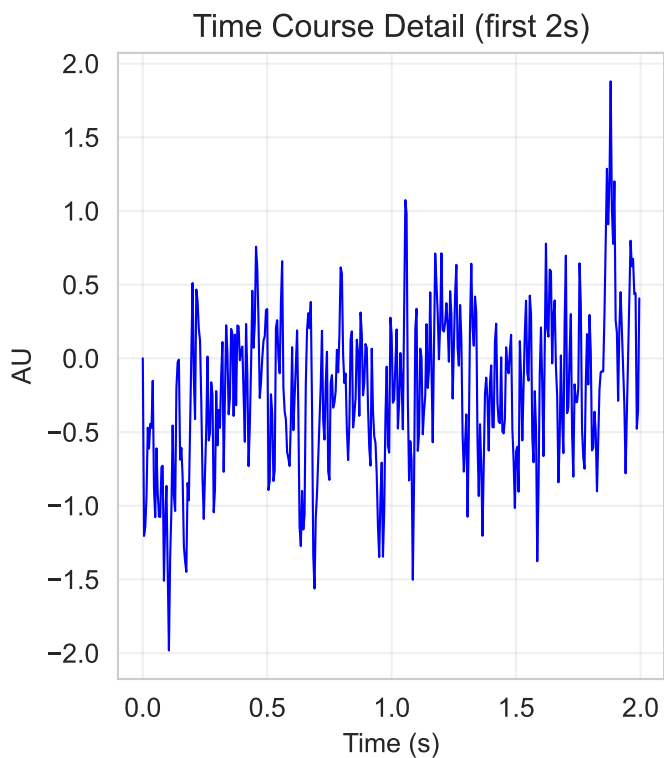
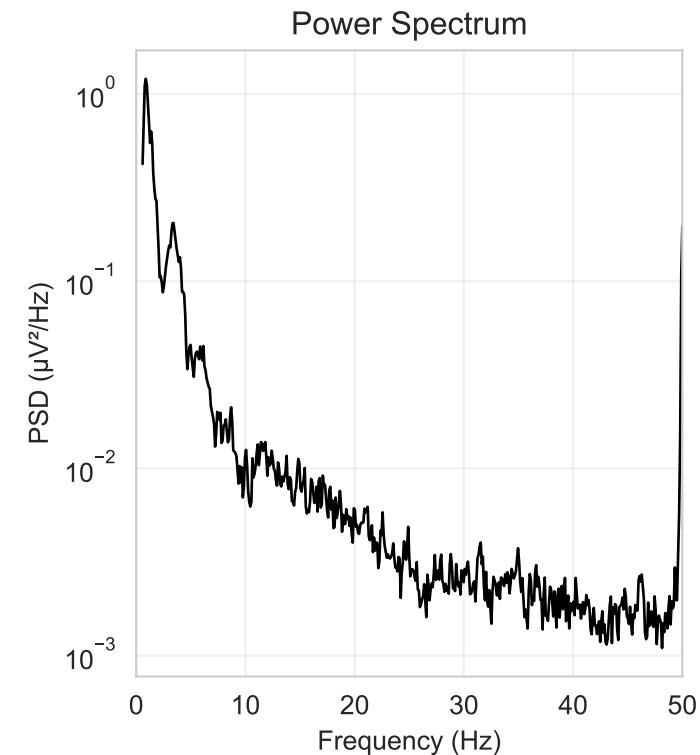
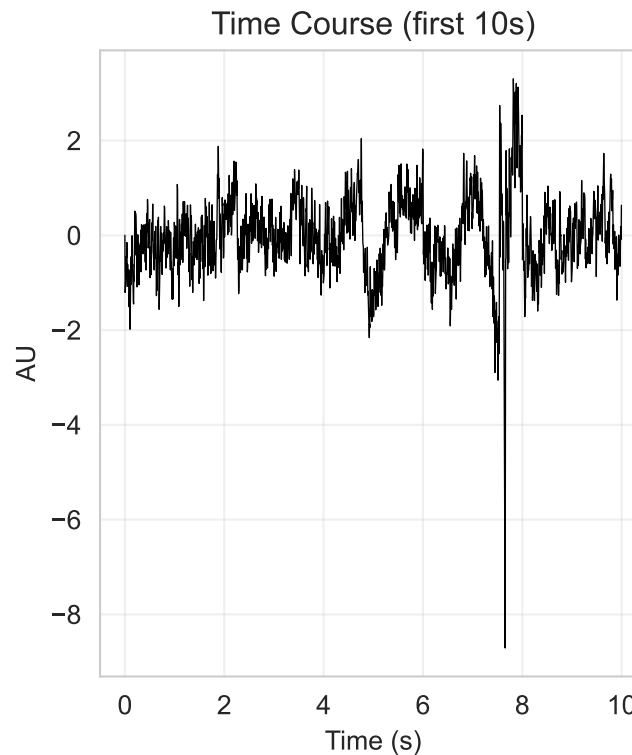
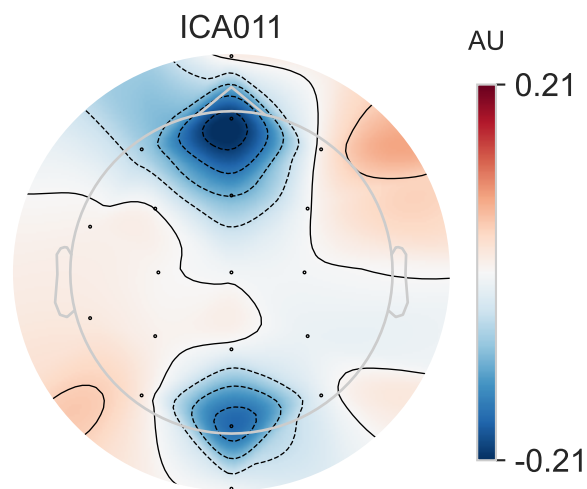
REJECTION RATIONALE:

- Moderate signature
- Review recommended

This Component in Context



ICA011 - REJECTED COMPONENT



Component Statistics:

Mean: -0.001
Std: 1.251
Min: -31.561
Max: 27.597
Kurtosis: 150.192

Explained Variance: 8.30%
Rank by Variance: #3

REJECTION RATIONALE:

- EXTREME artifact signature
- Likely eye blinks/movements

