

# ICA Component Rejection Report

## REJECTION SUMMARY

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Total Components: 19  
Excluded: 1 components  
Kept: 18 components

EXCLUDED COMPONENTS: ICA002

## VARIANCE ANALYSIS

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Total variance removed: 9.32%

Variance per excluded component:  
ICA002: 9.32% (Rank # 1, Kurtosis: 164.18)

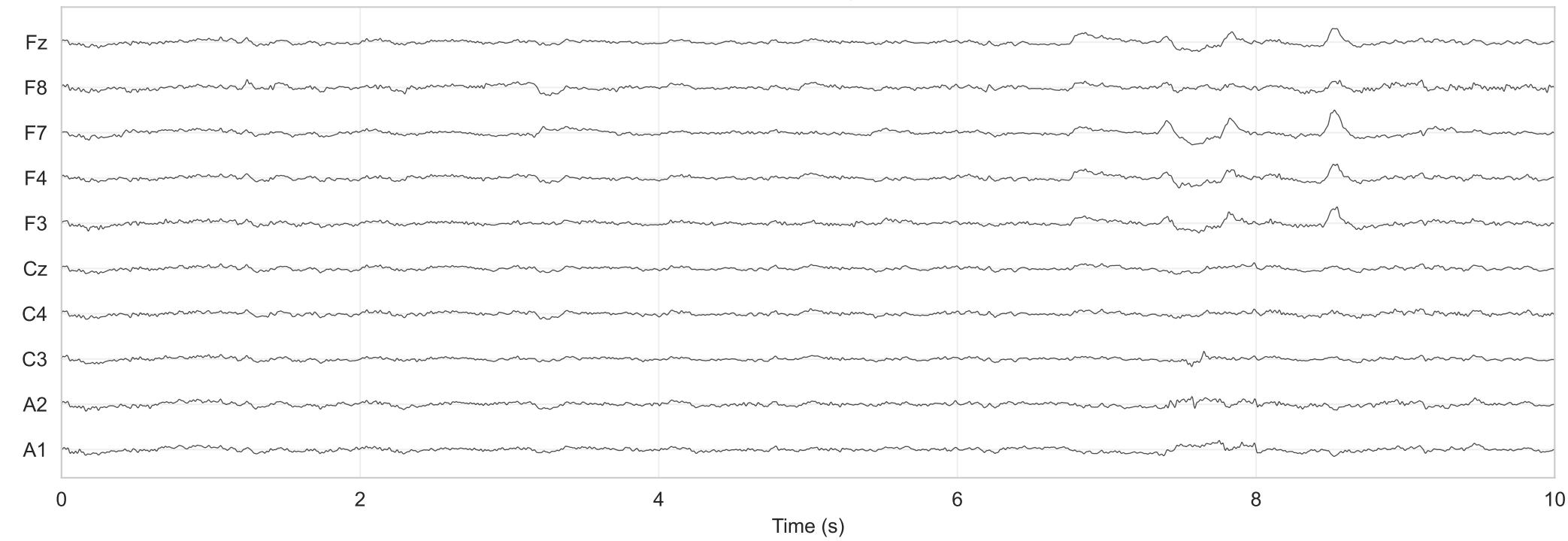
## ARTIFACT SIGNATURES

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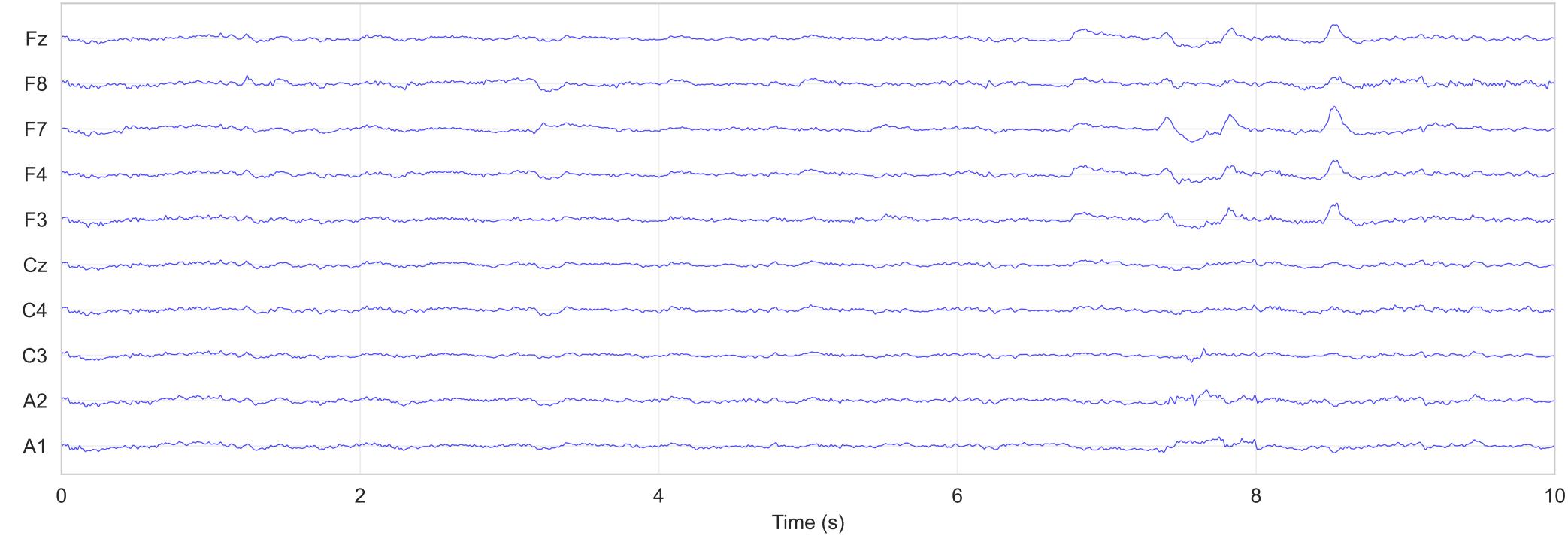
ICA002: Strong artifact (very high kurtosis)

# EEG Data: Before and After ICA Artifact Rejection

## Before ICA Rejection

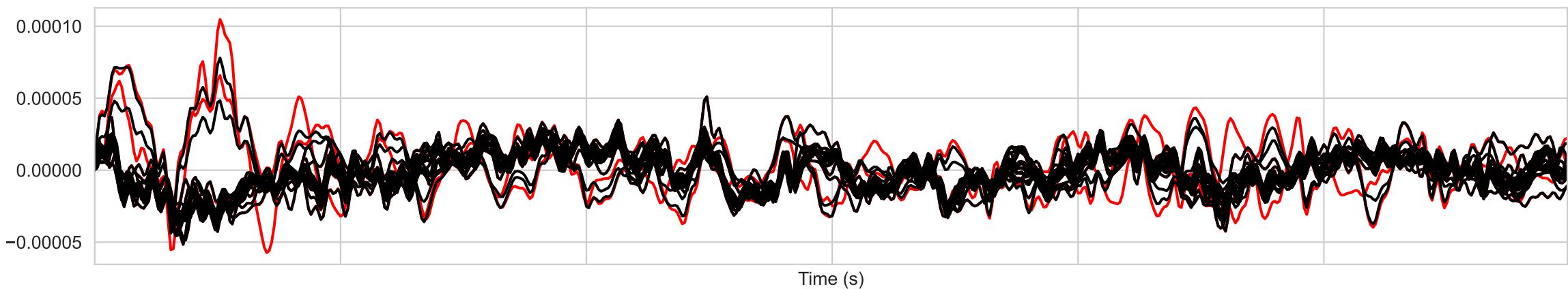


## After ICA Rejection



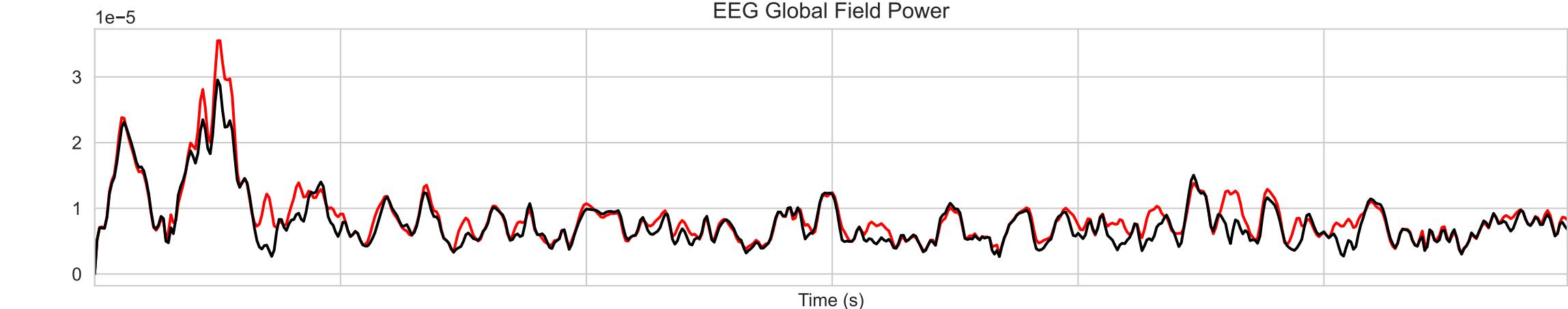
# Overlay: Effect of Removing All Excluded Components (ICA002)

Raw EEG data



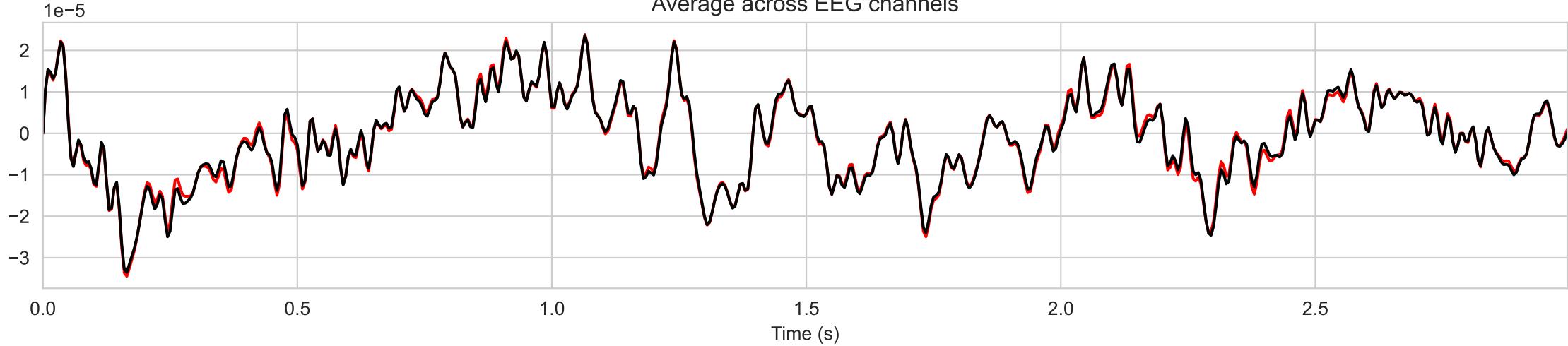
Time (s)

EEG Global Field Power



Time (s)

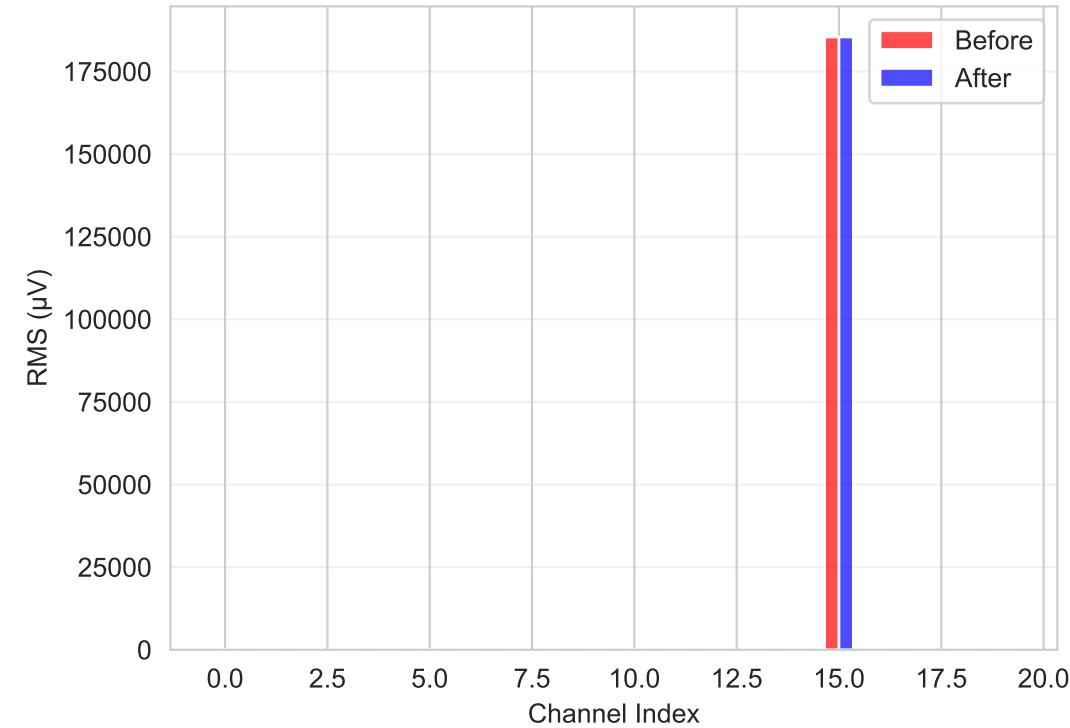
Average across EEG channels



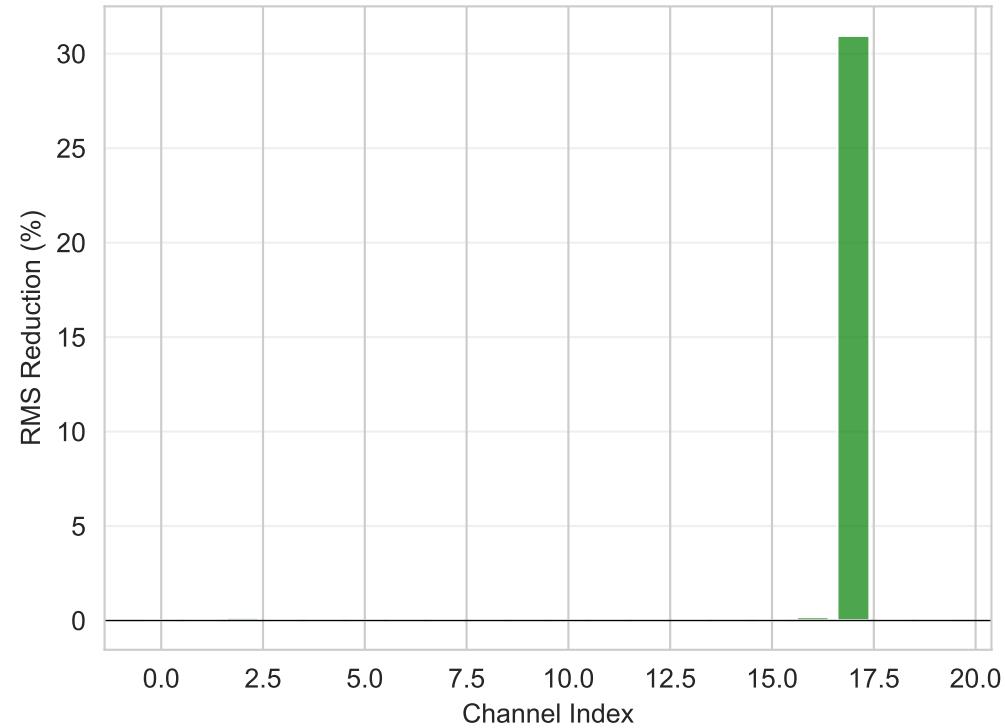
Time (s)

# Signal Quality Metrics: Before vs After ICA

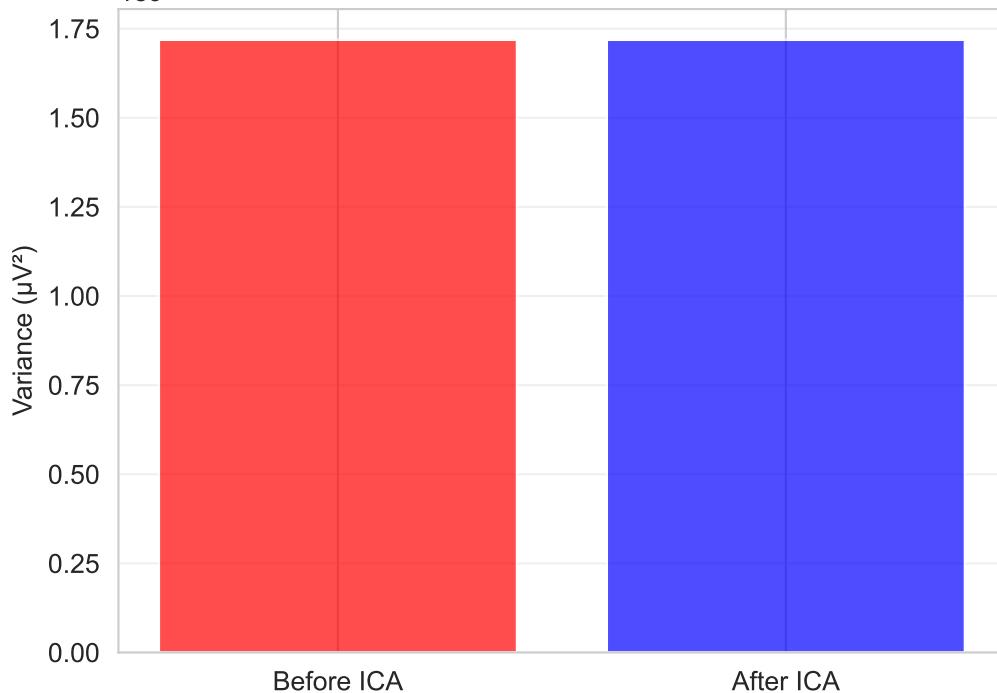
RMS Amplitude by Channel



Artifact Reduction by Channel



Overall Signal Variance



## SIGNAL QUALITY METRICS

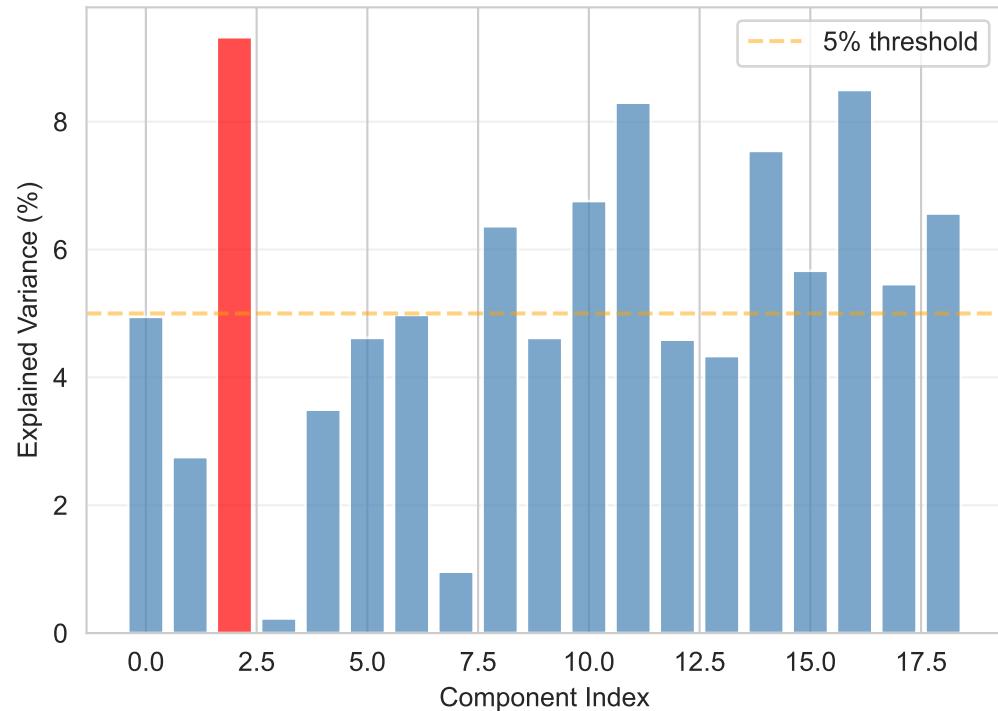
Before ICA Rejection:  
Mean RMS: 9299.80  $\mu\text{V}$   
Std RMS: 40408.97  $\mu\text{V}$   
Variance: 1719151456.22  $\mu\text{V}^2$

After ICA Rejection:  
Mean RMS: 9297.93  $\mu\text{V}$   
Std RMS: 40409.40  $\mu\text{V}$   
Variance: 1719151081.41  $\mu\text{V}^2$

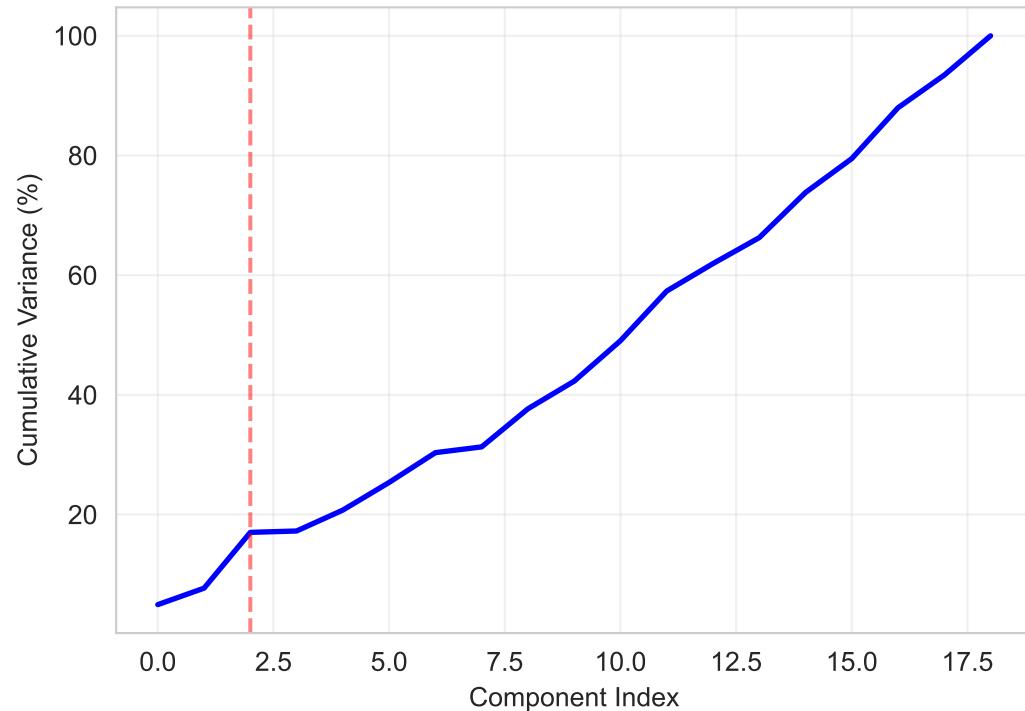
Overall Reduction:  
RMS reduction: 0.02%  
Variance reduction: 0.00%

# Variance Distribution Analysis

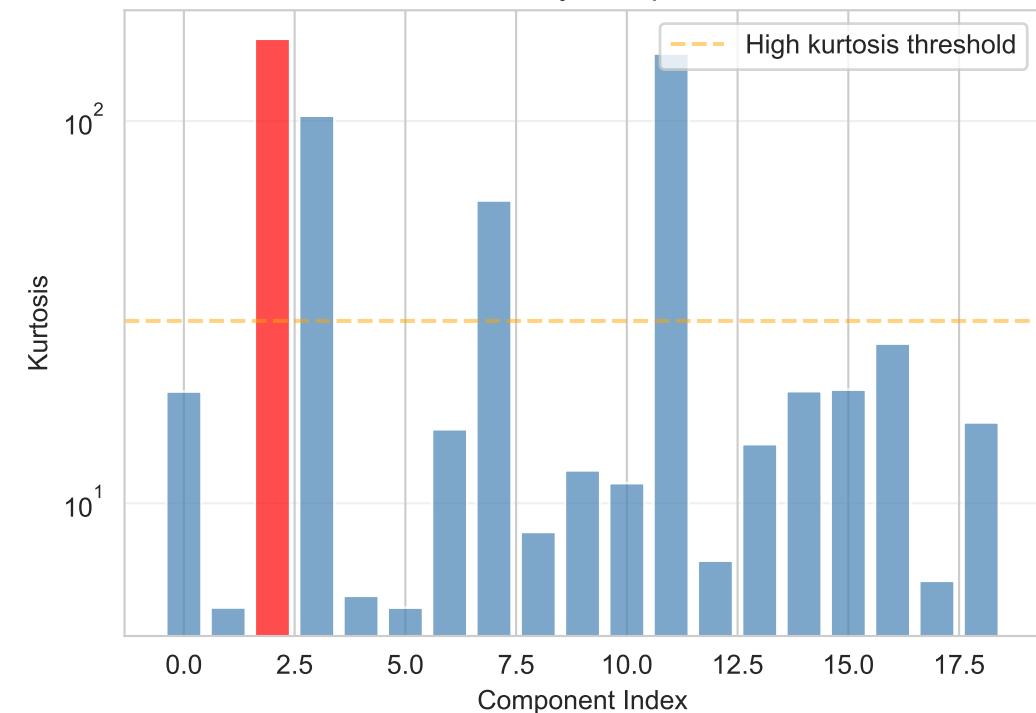
Variance by Component



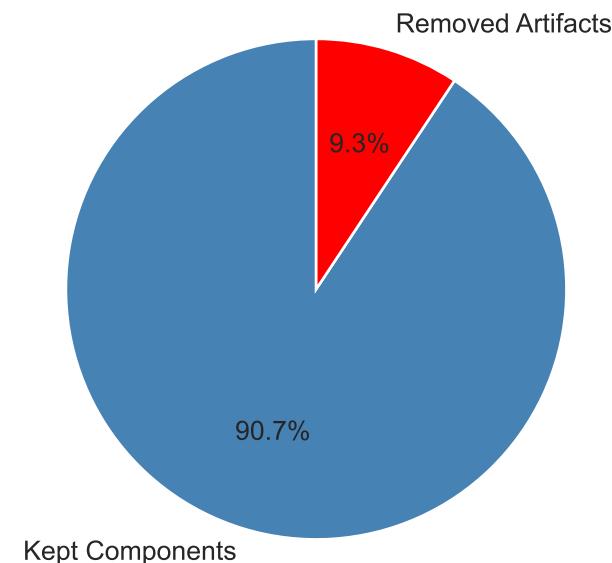
Cumulative Variance Explained



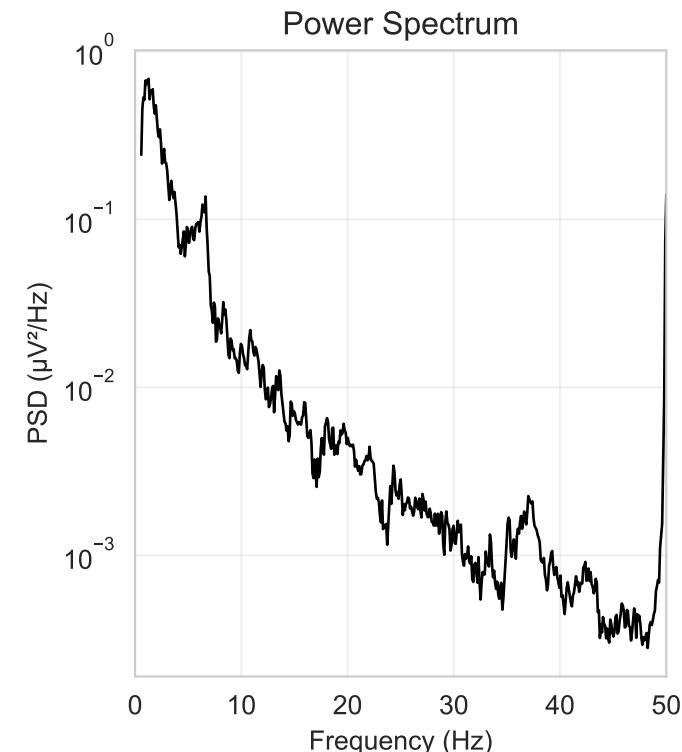
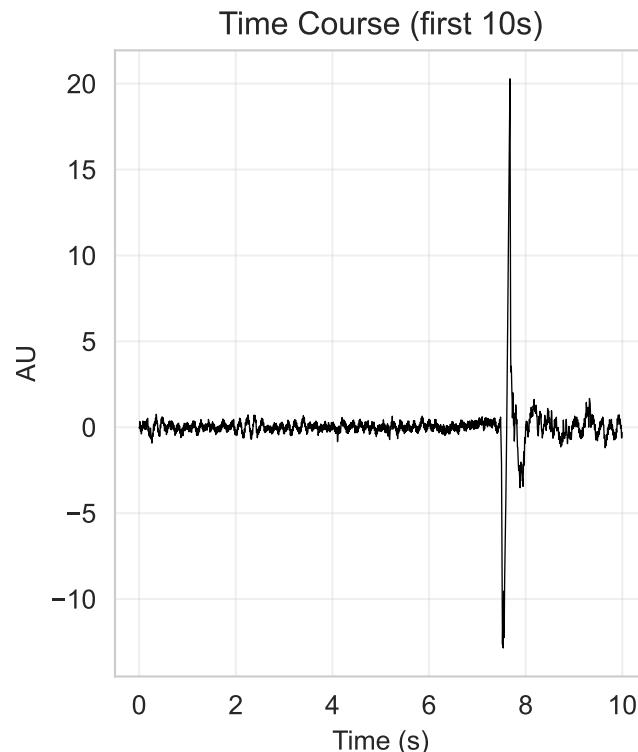
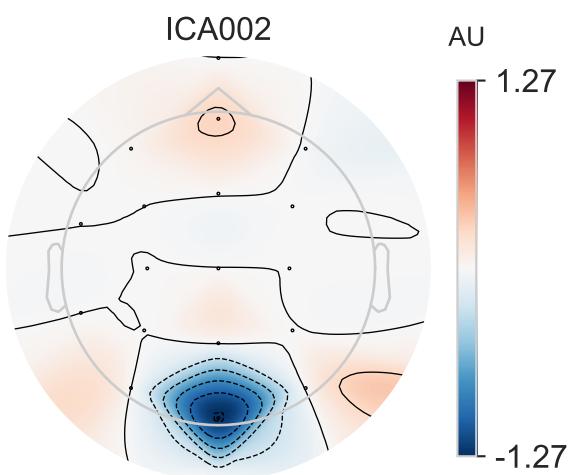
Kurtosis by Component



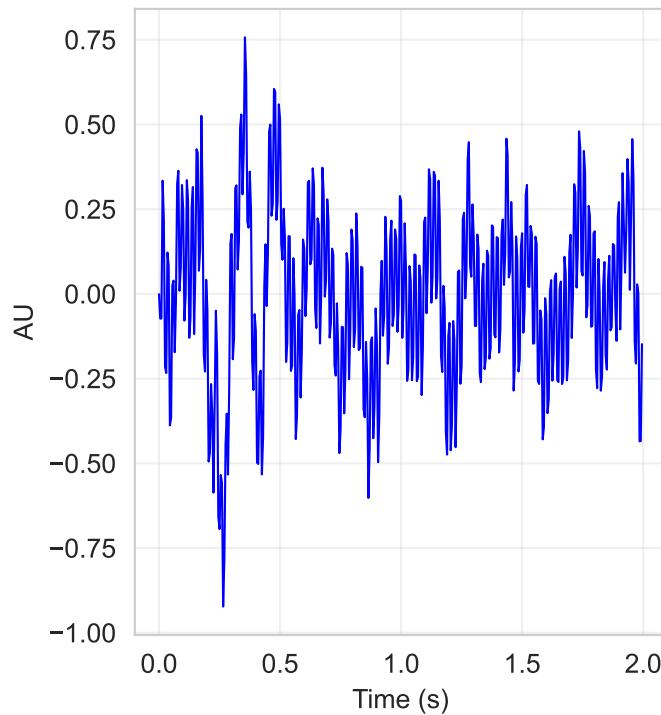
Variance Distribution



# ICA002 - REJECTED COMPONENT



Time Course Detail (first 2s)



#### 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

This Component in Context

