

# QuantumBCI Analysis Report

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## Session Information

Filename:	S001R01.edf
Upload Time:	2025-10-06 20:35:59
Original Channels:	64
Selected Channels:	20
Processing Status:	Complete

## Brain Metrics Analysis

Brain State:	Deep Sleep (Stage 3-4 NREM)
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## Frequency Band Powers

Band	Absolute Power (uV^2)	Relative Power (%)
Delta	0.5144	78.18%
Theta	0.1129	17.16%
Alpha	0.0237	3.61%
Beta	0.0057	0.87%
Gamma	0.0013	0.19%

## Model Predictions

Model	Prediction	Accuracy	Time (s)
Brain State Classifier (Sierpinski)	Deep Sleep (Stage 3-4 NREM)	100.00%	0.050
Quantum SVM (QSVM)	High Neural Activity	50.00%	5.815

## Summary & Recommendations

- Best performing model: Brain State Classifier (Scientific) with 100.00% accuracy
- Detected brain state: Deep Sleep (Stage 3-4 NREM)
- Dominant frequency band: Delta
- Total spectral power: 0.6581  $\mu\text{V}^2$

### **Clinical Recommendations:**

- Low alpha activity - may indicate stress or active cognitive processing
- Continue monitoring for trend analysis
- Consult with neurologist for clinical interpretation