Supplementary material

Table S1. Mean weighted frequency values (Hz) calculated from the intrinsic mode functions extracted from the EEG of thirty-four healthy volunteers using two spectral methods.

Lead	Method	IMF1	IMF2	IMF3	IMF4	IMF5	IMF6
Fp1	FFT	44.36 ± 3.8	26.08 ± 1.8	12.53 ± 1.5	8.47 ± 0.9	4.25 ± 0.4	2.29 ± 0.3
	HHT	49.85 ± 2.9 ↑	29.23 ± 1.9 ↑	13.64 ± 1.7 ↑	8.46 ± 0.9	4.28 ± 0.4	2.18 ± 0.3 ↓
Fp2	FFT	44.23 ± 4.0	26.12 ± 1.8	12.51 ± 1.5	8.44 ± 0.9	4.24 ± 0.4	2.26 ± 0.2
	HHT	49.81 ± 3.0 ↑	29.28 ± 1.8 ↑	13.59 ± 1.7 ↑	8.39 ± 1.0	4.24 ± 0.4	2.15 ± 0.3 ↓
F3	FFT	43.95 ± 3.7	25.99 ± 1.9	12.53 ± 1.5	8.49 ± 0.9	4.29 ± 0.3	2.27 ± 0.2
	HHT	49.64 ± 2.6 ↑	29.24 ± 2.0 ↑	13.65 ± 1.7 ↑	8.41 ± 1.0	4.30 ± 0.3	2.19 ± 0.3 ↓
F4	FFT	43.77 ± 3.4	25.95 ± 1.8	12.50 ± 1.5	8.43 ± 0.9	4.24 ± 0.4	2.27 ± 0.2
	HHT	49.51 ± 2.4 ↑	29.30 ± 1.9 ↑	13.67 ± 1.7 ↑	8.34 ± 0.9	4.23 ± 0.4	2.19 ± 0.3 ↓
C3	FFT	43.52 ± 3.7	25.80 ± 1.8	12.33 ± 1.4	8.68 ± 0.9	4.30 ± 0.4	2.26 ± 0.3
	HHT	49.50 ± 2.6 ↑	29.40 ± 1.9 ↑	13.45 ± 1.6 ↑	8.71 ± 1.0	4.33 ± 0.4	2.18 ± 0.3 ↓
C4	FFT	43.71 ± 4.0	25.81 ± 2.0	12.24 ± 1.3	8.70 ± 0.9	4.29 ± 0.4	2.27 ± 0.2
	HHT	49.83 ± 2.8 ↑	29.37 ± 2.1 ↑	13.44 ± 1.5 ↑	8.72 ± 1.0	4.28 ± 0.4	2.18 ± 0.3 ↓
P3	FFT	43.45 ± 4.0	25.78 ± 1.8	12.36 ± 1.3	8.99 ± 0.9	4.35 ± 0.4	2.27 ± 0.2
	HHT	49.57 ± 2.6 ↑	29.38 ± 1.9 ↑	13.53 ± 1.6 ↑	8.98 ± 1.1	4.35 ± 0.4	2.17 ± 0.3 ↓
P4	FFT	43.49 ± 3.8	25.66 ± 1.8	12.30 ± 1.2	8.96 ± 1.0	4.31 ± 0.4	2.30 ± 0.3
	HHT	49.57 ± 2.5 ↑	29.34 ± 2.0 ↑	13.53 ± 1.5 ↑	8.98 ± 1.2	4.29 ± 0.4	2.20 ± 0.3 ↓
O1	FFT	43.62 ± 3.6	25.66 ± 1.7	12.10 ± 1.2	9.10 ± 1.1	4.34 ± 0.4	2.31 ± 0.2
	HHT	49.54 ± 2.3 ↑	29.33 ± 1.7 ↑	13.28 ± 1.6 ↑	9.15 ± 1.2	4.35 ± 0.4	2.22 ± 0.3 ↓
O2	FFT	43.43 ± 3.2	25.80 ± 1.6	12.00 ± 1.3	9.28 ± 1.1	4.37 ± 0.4	2.34 ± 0.3
	HHT	49.30 ± 1.7 ↑	29.45 ± 1.7 ↑	13.16 ± 1.6 ↑	9.36 ± 1.3	4.32 ± 0.4↓	2.26 ± 0.3 ↓
F7	FFT	43.86 ± 3.2	25.93 ± 1.8	12.55 ± 1.5	8.55 ± 0.9	4.27 ± 0.3	2.31 ± 0.2
	HHT	49.37 ± 2.3 ↑	29.04 ± 1.8 ↑	13.68 ± 1.7 ↑	8.54 ± 1.0	4.23 ± 0.3	2.19 ± 0.3 ↓
F8	FFT	44.07 ± 3.7	26.04 ± 1.9	12.46 ± 1.4	8.51 ± 0.9	4.23 ± 0.4	2.35 ± 0.2
	HHT	49.64 ± 2.6 ↑	29.30 ± 1.9 ↑	13.56 ± 1.6 ↑	8.47 ± 1.0	4.23 ± 0.4	2.25 ± 0.3 ↓
T3	FFT	43.84 ± 3.3	26.03 ± 1.9	12.56 ± 1.4	8.64 ± 0.9	4.31 ± 0.4	2.28 ± 0.2
	HHT	49.40 ± 2.3 ↑	29.27 ± 1.8 ↑	13.66 ± 1.6 ↑	8.68 ± 1.1	4.28 ± 0.3	2.19 ± 0.3 ↓
T4	FFT	43.91 ± 3.5	26.01 ± 2.0	12.44 ± 1.3	8.67 ± 1.0	4.33 ± 0.4	2.32 ± 0.3
	HHT	49.49 ± 2.2 ↑	29.23 ± 1.8 ↑	13.54 ± 1.4 ↑	8.66 ± 1.1	4.31 ± 0.3	2.23 ± 0.3 ↓
T5	FFT	43.99 ± 3.9	25.85 ± 1.8	12.40 ± 1.3	8.98 ± 1.0	4.35 ± 0.3	2.27 ± 0.3
	HHT	49.67 ± 2.7 ↑	29.16 ± 1.6 ↑	13.56 ± 1.5 ↑	9.02 ± 1.2	4.30 ± 0.3 ↓	2.17 ± 0.3 ↓
T6	FFT	43.71 ± 3.6	25.92 ± 1.7	12.41 ± 1.3	8.91 ± 1.1	4.40 ± 0.4	2.32 ± 0.3
	HHT	49.50 ± 2.4 ↑	29.42 ± 1.8 ↑	13.59 ± 1.6 ↑	9.00 ± 1.3	4.37 ± 0.4	2.21 ± 0.3 ↓
Fz	FFT	43.89 ± 3.7	25.98 ± 1.6	12.53 ± 1.6	8.38 ± 0.9	4.17 ± 0.3	2.28 ± 0.3
	HHT	50.00 ± 2.8 ↑	29.47 ± 1.9 ↑	13.77 ± 1.8 ↑	8.34 ± 0.9	4.19 ± 0.3	2.21 ± 0.3 ↓
Cz	FFT	43.22 ± 3.2	25.82 ± 1.8	12.33 ± 1.4	8.62 ± 0.9	4.27 ± 0.4	2.29 ± 0.3
	HHT	49.40 ± 2.3 ↑	29.41 ± 1.9 ↑	13.50 ± 1.7 ↑	8.61 ± 0.9	4.29 ± 0.4	2.19 ± 0.3 ↓
Pz	FFT	43.06 ± 3.3	25.76 ± 1.7	12.21 ± 1.2	8.90 ± 1.0	4.36 ± 0.4	2.29 ± 0.3
	HHT	49.35 ± 2.4 ↑	29.37 ± 2.0 ↑	13.36 ± 1.5 ↑	8.86 ± 1.1	4.37 ± 0.5	2.20 ± 0.3 ↓

Results are expressed as mean ± standard deviation; ↑_ Significant higher, or ↓_ lower values ($p < 0.05$) for the ANOVA "F" statistics of values calculated using the FFT or the HHT methods. FFT_ Fast Fourier Transform; HHT_ Hilbert Huang Transform.

Table S2. Power spectral density expressed in normalized units (%) calculated from the intrinsic mode functions extracted from the EEG of thirty-four healthy volunteers using two spectral methods.

Lead	Method	IMF1	IMF2	IMF3	IMF4	IMF5	IMF6
Fp1	FFT	6.72 ± 6.3	13.41 ± 8.4	42.75 ± 15.4	22.40 ± 8.5	10.77 ± 5.4	3.94 ± 1.8
	HHT	7.02 ± 6.3	13.57 ± 8.2	42.43 ± 15.2	22.19 ± 8.3	10.69 ± 5.4 ↓	4.11 ± 1.8
Fp2	FFT	6.33 ± 4.8	13.22 ± 8.3	42.72 ± 15.3	22.44 ± 8.7	11.14 ± 5.7	4.15 ± 2.1
	HHT	6.61 ± 4.9	13.39 ± 8.2	42.50 ± 15.2	22.19 ± 8.4	10.99 ± 5.5	4.32 ± 2.1
F3	FFT	5.63 ± 3.8	13.60 ± 8.8	45.13 ± 15.7	22.82 ± 8.7	9.67 ± 4.7	3.16 ± 1.4
	HHT	5.94 ± 4.0	13.79 ± 8.7	44.89 ± 15.4	22.54 ± 8.5	9.55 ± 4.7	3.29 ± 1.4
F4	FFT	5.17 ± 3.3	13.37 ± 8.5	45.29 ± 15.8	22.67 ± 8.6	10.13 ± 5.3	3.38 ± 1.8
	HHT	5.46 ± 3.5	13.59 ± 8.4	45.09 ± 15.6	22.34 ± 8.3	10.01 ± 5.2	3.50 ± 1.8
C3	FFT	4.84 ± 4.4	12.56 ± 8.3	48.69 ± 14.4	22.85 ± 9.1	8.52 ± 4.8	2.55 ± 1.4
	HHT	5.10 ± 4.5	12.81 ± 8.2	48.43 ± 14.3	22.61 ± 8.9	8.40 ± 4.7	2.65 ± 1.4 ↑
C4	FFT	4.39 ± 3.6	12.10 ± 7.9	49.49 ± 13.6	22.85 ± 8.7	8.61 ± 4.9	2.56 ± 1.3
	HHT	4.63 ± 3.8	12.32 ± 7.8	49.20 ± 13.6	22.66 ± 8.5	8.56 ± 4.9	2.63 ± 1.3
P3	FFT	4.29 ± 6.8	9.90 ± 7.7	50.89 ± 14.7	24.96 ± 11.3	7.50 ± 4.8	2.45 ± 1.5
	HHT	4.49 ± 6.9	10.14 ± 7.6	50.58 ± 14.7	24.76 ± 11.1	7.47 ± 4.8	2.56 ± 1.5 ↑
P4	FFT	3.69 ± 3.9	10.30 ± 8.0	51.17 ± 13.6	24.46 ± 10.2	8.00 ± 4.6	2.38 ± 1.2
	HHT	3.87 ± 4.0	10.49 ± 7.9	50.91 ± 13.7	24.30 ± 10.1	7.96 ± 4.6	2.48 ± 1.2 ↑
O1	FFT	3.39 ± 3.3	8.67 ± 7.2	53.81 ± 14.9	24.82 ± 11.7	7.05 ± 4.1	2.27 ± 1.1
	HHT	3.55 ± 3.4 ↑	8.82 ± 7.1 ↑	53.41 ± 14.8	24.80 ± 11.5	7.04 ± 4.1	2.38 ± 1.1
O2	FFT	2.95 ± 2.9	7.90 ± 6.8	55.86 ± 15.4	24.8 ± 12.1	6.51 ± 3.8	1.99 ± 0.9
	HHT	3.12 ± 3.1 ↑	8.04 ± 6.8 ↑	55.49 ± 15.3 ↓	24.82 ± 12.1	6.47 ± 3.8 ↓	2.07 ± 0.9 ↑
F7	FFT	6.03 ± 4.8	12.89 ± 7.4	43.50 ± 14.8	23.48 ± 8.7	10.49 ± 5.1	3.62 ± 1.6
	HHT	6.34 ± 5.0	13.10 ± 7.3 ↑	43.13 ± 14.5	23.22 ± 8.5	10.43 ± 5.1	3.79 ± 1.6
F8	FFT	6.40 ± 5.1	12.71 ± 7.2	43.77 ± 14.5	22.53 ± 8.5	10.90 ± 5.4	3.69 ± 1.7
	HHT	6.67 ± 5.2	12.91 ± 7.1	43.43 ± 14.4	22.31 ± 8.3	10.84 ± 5.2 ↑	3.85 ± 1.8
T3	FFT	7.26 ± 5.7	13.57 ± 7.8	44.30 ± 13.9	23.40 ± 9.0	8.69 ± 4.6	2.76 ± 1.3
	HHT	7.62 ± 5.9	13.81 ± 7.7	43.96 ± 13.7	23.09 ± 8.7	8.64 ± 4.6	2.87 ± 1.4
T4	FFT	7.26 ± 6.0	13.83 ± 8.0	45.27 ± 13.2	22.21 ± 8.4	8.75 ± 5.0	2.68 ± 1.3
	HHT	7.55 ± 6.2	14.02 ± 7.9	44.93 ± 13.3	22.02 ± 8.4	8.70 ± 4.9	2.77 ± 1.3
T5	FFT	4.97 ± 3.9	10.69 ± 6.8	47.51 ± 13.3	26.31 ± 11.2	7.95 ± 4.6	2.57 ± 1.1
	HHT	5.21 ± 4.1	10.91 ± 6.7	47.09 ± 13.3	26.19 ± 11.2 ↓	7.92 ± 4.5	2.69 ± 1.2 ↑
T6	FFT	4.83 ± 4.9	10.65 ± 7.3	48.75 ± 14.6	25.39 ± 11.2	7.86 ± 4.8	2.52 ± 1.2
	HHT	5.06 ± 5.0	10.84 ± 7.3	48.40 ± 14.6	25.25 ± 11.1	7.84 ± 4.8	2.61 ± 1.2
Fz	FFT	4.15 ± 2.7	12.18 ± 8.5	45.51 ± 16.6	23.97 ± 9.5	10.84 ± 5.8	3.36 ± 1.9
	HHT	4.40 ± 2.8	12.35 ± 8.3	45.29 ± 16.3	23.75 ± 9.2	10.72 ± 5.7	3.50 ± 1.9
Cz	FFT	3.38 ± 2.7	12.38 ± 8.9	48.28 ± 15.1	23.48 ± 9.6	9.59 ± 5.4	2.88 ± 1.5
	HHT	3.62 ± 2.9	12.59 ± 8.8	48.04 ± 15.0	23.29 ± 9.4	9.50 ± 5.4	2.97 ± 1.5
Pz	FFT	2.88 ± 2.8	10.41 ± 8.9	51.81 ± 15.1	24.21 ± 10.7	8.12 ± 5.1	2.57 ± 1.4
	HHT	3.07 ± 2.9 ↑	10.62 ± 8.8	51.51 ± 14.9	24.05 ± 10.5	8.07 ± 5.0	2.67 ± 1.4

Results are expressed as mean ± standard deviation; ↑_ Significant higher, or ↓_ lower values (p <0.05) for the ANOVA "F" statistics of values calculated using the FFT or the HHT methods; original values required a *logit* transformation to achieve a normal distribution before the statistical testing. FFT_ Fast Fourier Transform; HHT_ Hilbert Huang Transform.