**Supplementary file 1a**

|  |  |  |
| --- | --- | --- |
| Subject | Right hemisphere (x. y. z) | Left Hemisphere (x. y. z) |
| 1 | 56.328. -23.081. 5.419 | -53.954. -28.559. 8 |
| 2 | 50.722. -18.320. 7.010 | -54.714. -15.714. 6.286 |
| 3 | 61.478. -21.304. 7.565 | -56.820. -21.533. 5.072 |
| 4 | 57.482. -20.392. 1.396 | -53.491. -25.509. 4.541 |
| 5 | 58.336. -15.748. 4.899 | -54.254. -22.254. 5.559 |
| 6 | 56.226. -9.2260. 1.516 | -51.692. -10.462. 0.385 |
| 7 | 55.907. -25.389. 7.130 | -51.268. -29.895. 9.579 |
| 8 | 62.769. -22. 10.077 | -63.571. -23.571. 6.429 |
| 9 | 55.442. -17.731. 6.673 | -56.679. -22.643. 8.911 |
| 10 | 59.404. -29.527. 4.567 | -54.790. -25.559. 7.378 |
| 11 | 55.935. -15.613. 0.1610 | -51.500. -20.357. 1.286 |
| 12 | 54.150. -16.750. 3.500 | -57.343. -24.057. 9.114 |
| 13 | 52.759. -12.328. 2.724 | -48.783. -24.832. 9.081 |
| 14 | 58.917. -16.887. 3.702 | -54.884. -28.231. 6.787 |
| 15 | 52.340. -17.814. 3.633 | -50.180. -30.329. 10.273 |
| 16 | 54.368. -22.263. 3.737 | -48.278. -24.845. 7.320 |
| 17 | 58.643. -25.881. 9.238 | -54.026. -28.416. 7.675 |
| 18 | 57.471. -22.422. 7.922 | -54.475. -27.050. 8.307 |
| 19 | 58.098. -22.108. 5.647 | -53.211. -23.376. 7.193 |
| 20 | 62.803. -10.039. 3.618 | -49.769. -22.846. 9.462 |
| 21 | 60.239. -25.271. 3.401 | -56.011. -22.379. 4.629 |
| 22 | 52.548. -26.839. 13.226 | -57.951. -19.951. 5.659 |
| 23 | 50.070. -18.366. 5.127 | -50.029. -25.441. 8.971 |
| 24 | 55.563. -19.403. 7.672 | -54.150. -27.175. 6.950 |
| 25 | 58.549. -11.310. 1.028 | -52.122. -20.204. 5.571 |
| 26 | 53.714. -24.333. 6.952 | -51.435. -27.355. 6.419 |
| 27 | 59.127. -23.131. 7.138 | -51.872. -24.702. 6.830 |
| 28 | 47.600. -28.600. 5 | -55.721. -25.397. 9.588 |
| 29 | 59.524. -20.452. 3.595 | -60.577. -20.731. 6.154 |
| 30 | 54.923. -13.231. -1.462 | -55.589. -27.881. 9.144 |
| 31 | 53.910. -18.594. 4.075 | -52.071. -33.614. 10.614 |
| 32 | 57.364. -26.150. 8.196 | -61.533. -25.800. 7.467 |
| 33 | 55.762. -22.992. 7.053 | -53.278. -26.711. 9.422 |
| 34 | 54.862. -21.552. 8.862 | -50.090. -24.426. 7.761 |
| 35 | 58.468. -25.152. 3.949 | -55.136. -23.412. 6.038 |
| 36 | 58.347. -23.042. 6.627 | -53.846. -25.949. 7.360 |
| 37 | 62.104. -20.007. 5.582 | -54.661. -18.835. 4.009 |
| 38 | 57.733. -23.168. 5.426 | -51.351. -28.511. 10.218 |
| 39 | 59.427. -22.708. 6.6850 | -54.-27.407. 9.037 |

**Supplementary file 1b**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | Formula | AIC | Δ AIC | BIC | LogLikelihood  | Deviance |
| 1 | ***Gap detection* ~ 1 + sinFM + cosFM + (1 + sinFM + cosFM | participant)** | **46560**  | **0** | **46637**  | **-23271**  | **46542** |
| 2 | *Gap detection* ~ 1 + sintACS + costACS + sinFM + cosFM + (1 + sintACS + costACS + sinFM + cosFM | participant) | 46566  |  6.203 | 46738  | -23263  | 46526 |
| 3 | *Gap detection* ~ 1 + sintACS\*sinFM + costACS\*sinFM + sintACS\*cosFM + costACS\*cosFM + (1 + sintACS:sinFM + costACS:sinFM + sintACS:cosFM + costACS:cosFM | participant) | 47252  | 691.635 | 47457  | -23602  | 47204 |

**Supplementary file 1c**

|  |  |  |  |
| --- | --- | --- | --- |
|  | Formula | AICc | Δ AICc\* |
| **1** | ***ΔtACS-amplitude* ~ 1 + ΔDays + ΔMinutes**  | **97.182**  |  **0** |
| 2 | *ΔtACS-amplitude* ~ 1 + Age + ΔDays + ΔMinutes  | 97.310  | 0.129 |
| 3 | *ΔtACS-amplitude* ~ 1 + Age + ΔDays + ΔMinutes + Δgap size threshold | 97.629  | 0.447 |
| 4 | *ΔtACS-amplitude* ~ 1 + Age + ΔDays + ΔMinutes + Δgap size threshold + Montage | 100.047  | 2.866 |
| 5 | *ΔtACS-amplitude* ~ 1 ΔDays  | 100.289  | 3.107 |
| 6 | *ΔtACS-amplitude* ~ 1 + ΔMinutes  | 101.269  | 4.087 |
| 7 | *ΔtACS-amplitude* ~ 1 + Gender + Age + ΔDays + ΔMinutes + Δgap size threshold + Montage | 102.803  | 5.621 |

**Supplementary file 1d**

|  |  |  |  |
| --- | --- | --- | --- |
|  | Formula | AICc | Δ AICc\* |
| **1** | ***|circ\_distance|* ~ 1 + gender** | **102.416** | **0** |
| 2 | *|circ\_distance|* ~ 1 + gender + Δgap size threshold | 102.703 | 0.288 |
| 3 | *|circ\_distance|* ~ 1 + gender + ΔMinutes + Δgap size threshold | 103.285 | 0.869 |
| 4 | *|circ\_distance|* ~ 1 + gender + Age + ΔMinutes + Δgap size threshold | 104.498 | 2.083 |
| 5 | *|circ\_distance|* ~ 1 + gender + Age + ΔMinutes + Δgap size threshold + Montage | 106.564 | 4.148 |
| 6 | *|circ\_distance|* ~ 1 + gender + Age + ΔDays + ΔMinutes + Δgap size threshold + Montage | 109.663 | 7.247 |

**Supplementary file 1e**

|  |  |  |  |
| --- | --- | --- | --- |
|  | Formula | AICc | Δ AICc\* |
| **1** | ***tACS\_amplitude* ~1 + Dist2Peak\*Normal\_E\_field + Normal\_E\_field\*Focality** | **94.429** | **0** |
| 2 | tACS\_amplitude ~1 + Corr2BOLD\*Normal\_E\_field\_ROI + Normal\_E\_field\_ROI\*Focality | 95.691 | 1.262 |
| 3 | tACS\_amplitude ~1 + Corr2BOLD\*E\_field\_ROI + E\_field\_ROI\*Focality | 95.853 | 1.423 |
| 4 | tACS\_amplitude ~1 + Corr2BOLD\*Normal\_E\_field + Normal\_E\_field\*Focality | 96.719 | 2.289 |
| 5 | tACS\_amplitude ~1 + Normal\_E\_field\*Focality | 97.127 | 2.697 |
| 6 | tACS\_amplitude ~1 + Dist2Peak\*E\_field + E\_field\*Focality | 97.156 | 2.727 |
| 7 | tACS\_amplitude ~1 + Dist2Peak\*Normal\_E\_field + Dist2Peak\*Focality + Normal\_E\_field\*Focality | 97.535 | 3.105 |
| 8 | tACS\_amplitude ~1 + E\_field\*Focality | 97.654 | 3.225 |
| 9 | tACS\_amplitude ~1 + Corr2BOLD\*E\_field + E\_field\*Focality | 97.727 | 3.297 |
| 10 | tACS\_amplitude ~1 + Dist2Peak\*Normal\_E\_field\_ROI + Normal\_E\_field\_ROI\*Focality | 98.022 | 3.592 |
| 11 | tACS\_amplitude ~1 + Dist2Peak\*Normal\_E\_field\_ROI + Dist2Peak\*Focality + Normal\_E\_field\_ROI\*Focality | 98.347 | 3.917 |
| 12 | tACS\_amplitude ~1 + Corr2BOLD\*Normal\_E\_field' | 98.463 | 4.034 |
| 13 | tACS\_amplitude ~1 + Dist2Peak\*Focality + Normal\_E\_field\_ROI\*Focality | 99.191 | 4.761 |
| 14 | tACS\_amplitude ~1 + Dist2Peak\*E\_field + Dist2Peak\*Focality + E\_field\*Focality | 99.423 | 4.993 |
| 15 | tACS\_amplitude ~1 + Corr2BOLD\*Normal\_E\_field\_ROI | 99.838 | 5.409 |
| 16 | tACS\_amplitude ~1 + Corr2BOLD\*E\_field | 99.852 | 5.422 |
| 17 | tACS\_amplitude ~1 + Dist2Peak\*Focality + Normal\_E\_field\*Focality' | 100.287 | 5.858 |
| 18 | tACS\_amplitude ~1 + Sham + BOLDbetaMean + Corr2BOLD\*E\_field\_ROI + E\_field\_ROI\*Focality | 100.538 | 6.109 |
| 19 | tACS\_amplitude ~1 + Dist2Peak\*E\_field\_ROI + E\_field\_ROI\*Focality | 100.993 | 6.564 |
| 20 | tACS\_amplitude ~1 + Sham + BOLDbetaMean + Corr2BOLD\*Normal\_E\_field\_ROI + Normal\_E\_field\_ROI\*Focality' | 101.048 | 6.618 |
| 21 | tACS\_amplitude ~1 + Dist2Peak\*E\_field\_ROI + Dist2Peak\*Focality + E\_field\_ROI\*Focality | 101.629 | 7.200 |
| 22 | tACS\_amplitude ~1 + Dist2Peak\*Focality + E\_field\*Focality | 101.696 | 7.267 |
| 23 | tACS\_amplitude ~1 + Dist2Peak\*Focality + E\_field\_ROI\*Focality | 101.785 | 7.356 |
| 24 | tACS\_amplitude ~1 + Sham + BOLDbetaMean + Corr2BOLD\*Normal\_E\_field + Normal\_E\_field\*Focality | 102.473 | 8.043 |
| 25 | tACS\_amplitude ~1 + Sham + BOLDbetaMean + Corr2BOLD\*E\_field + E\_field\*Focality | 102.796 | 8.366 |
| 26 | tACS\_amplitude ~1 + Dist2Peak\*Normal\_E\_field\_ROI + Dist2Peak\*Focality | 103.616 | 9.187 |
| 27 | tACS\_amplitude ~1 + Sham + BOLDbetaMean + Dist2Peak\*Normal\_E\_field + Dist2Peak\*Focality + Normal\_E\_field\*Focality  | 104.304 | 9.875 |
| 28 | tACS\_amplitude ~1 + Dist2Peak\*E\_field + Dist2Peak\*Focality | 104.308 | 9.879 |
| 29 | tACS\_amplitude ~1 + Sham + BOLDbetaMean + Dist2Peak\*Normal\_E\_field\_ROI + Dist2Peak\*Focality + Normal\_E\_field\_ROI\*Focality | 104.439 | 10.010 |
| 30 | tACS\_amplitude ~1 + Dist2Peak\*Normal\_E\_field + Dist2Peak\*Focality | 104.844 | 10.415 |
| 31 | tACS\_amplitude ~1 + Dist2Peak\*E\_field\_ROI + Dist2Peak\*Focality | 105.275 | 10.845 |
| 32 | tACS\_amplitude ~1 + Sham + BOLDbetaMean + Dist2Peak\*E\_field + Dist2Peak\*Focality + E\_field\*Focality | 105.285 | 10.856 |
| 33 | tACS\_amplitude ~1 + Sham + BOLDbetaMean + Dist2Peak\*E\_field\_ROI + Dist2Peak\*Focality + E\_field\_ROI\*Focality | 106.965 | 12.535 |