

Supporting Information for “Predicting MEG resting-state functional connectivity from microstructural information”

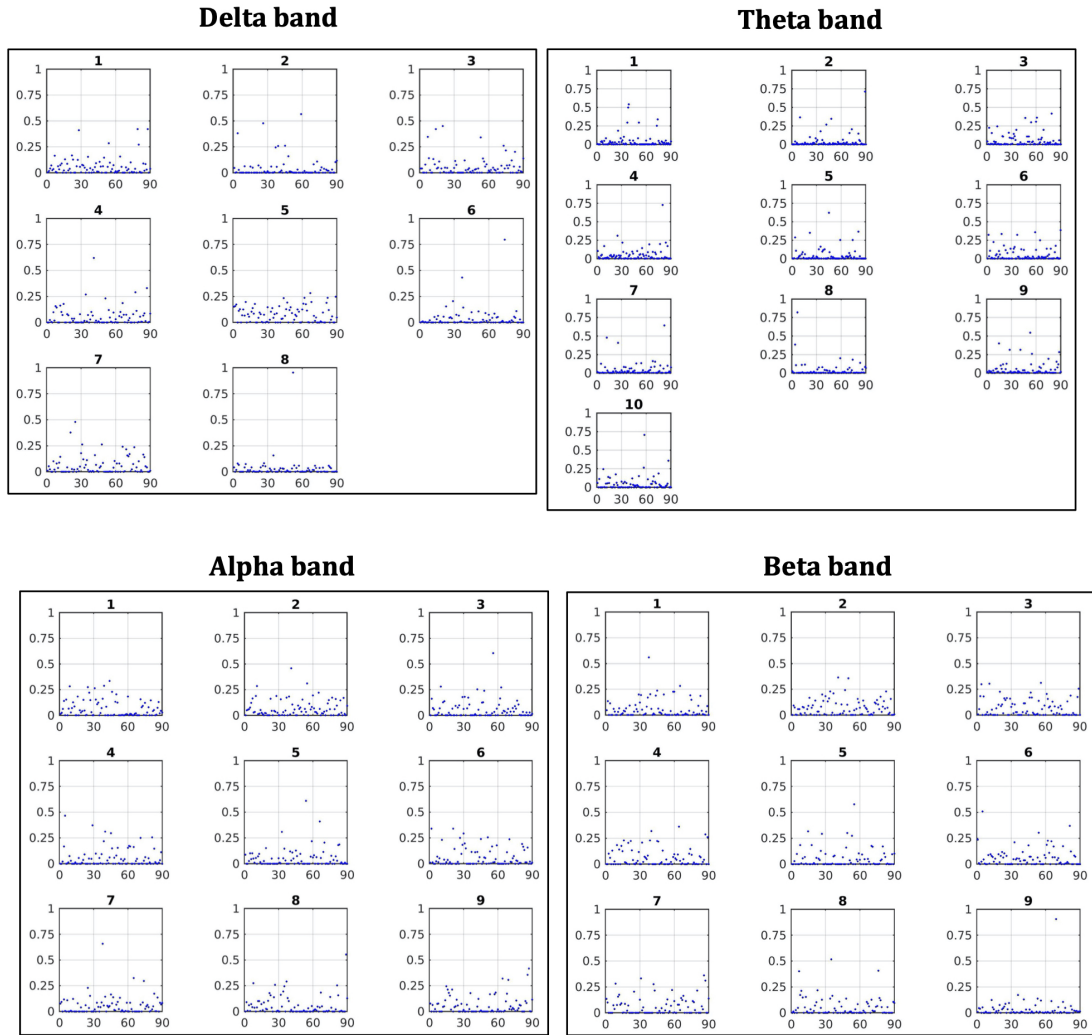


Figure 1: Relative contribution from each participant to each component of the FC_0 , for the four frequency bands. The horizontal axis is over the 90 participants.

1	Precentral L	19	Supp Motor Area L	37	Hippocampus L	55	Fusiform L	73	Putamen L
2	Precentral R	20	Supp Motor Area R	38	Hippocampus R	56	Fusiform R	74	Putamen R
3	Frontal Sup L	21	Olfactory L	39	ParaHippocampal L	57	Postcentral L	75	Pallidum L
4	Frontal Sup R	22	Olfactory R	40	ParaHippocampal R	58	Postcentral R	76	Pallidum R
5	Frontal Sup Orb L	23	Frontal Sup Medial L	41	Amygdala L	59	Parietal Sup L	77	Thalamus L
6	Frontal Sup Orb R	24	Frontal Sup Medial R	42	Amygdala R	60	Parietal Sup R	78	Thalamus R
7	Frontal Mid L	25	Frontal Med Orb L	43	Calcarine L	61	Parietal Inf L	79	Heschl L
8	Frontal Mid R	26	Frontal Med Orb R	44	Calcarine R	62	Parietal Inf R	80	Heschl R
9	Frontal Mid Orb L	27	Rectus L	45	Cuneus L	63	SupraMarginal L	81	Temporal Sup L
10	Frontal Mid Orb R	28	Rectus R	46	Cuneus R	64	SupraMarginal R	82	Temporal Sup R
11	Frontal Inf Oper L	29	Insula L	47	Lingual L	65	Angular L	83	Temporal Pole Sup L
12	Frontal Inf Oper R	30	Insula R	48	Lingual R	66	Angular R	84	Temporal Pole Sup R
13	Frontal Inf Tri L	31	Cingulum Ant L	49	Occipital Sup L	67	Precuneus L	85	Temporal Mid L
14	Frontal Inf Tri R	32	Cingulum Ant R	50	Occipital Sup R	68	Precuneus R	86	Temporal Mid R
15	Frontal Inf Orb L	33	Cingulum Mid L	51	Occipital Mid L	69	Paracentral Lobule L	87	Temporal Pole Mid L
16	Frontal Inf Orb R	34	Cingulum Mid R	52	Occipital Mid R	70	Paracentral Lobule R	88	Temporal Pole Mid R
17	Rolandic Oper L	35	Cingulum Post L	53	Occipital Inf L	71	Caudate L	89	Temporal Inf L
18	Rolandic Oper R	36	Cingulum Post R	54	Occipital Inf R	72	Caudate R	90	Temporal Inf R

Table 1: AAL atlas areas.

freq. band	NS	ED	FA	ED	bin	ED	MM	ED	RD	ED
delta	-0.005	-0.840	-0.035	-0.894	-0.083	-0.821	-0.001	-0.920	-0.047	-0.800
theta	-0.006	-0.551	-0.046	-0.632	-0.097	-0.549	-0.002	-0.672	-0.052	-0.532
alpha	-0.015	-0.838	-0.069	-1.034	-0.197	-0.852	-0.005	-1.101	-0.011	-0.817
beta	-0.017	-0.963	-0.092	-1.175	-0.231	-0.969	-0.006	-1.259	-0.118	-0.943

Table 2: Mean (over the 90 participants) value of the coefficients that result from the SPL algorithm, when each of the structural metric is used as a predictor with the Euclidean distance, for each frequency band.

freq. band	NS	ED	FA	ED	bin	ED	MM	tED	RD	ED
delta	-0.006	-0.790	-0.005	-0.872	-0.009	-0.811	-0.004	-0.874	-0.009	-0.801
theta	-0.006	-0.523	-0.005	-0.619	-0.10	-0.541	-0.006	-0.592	-0.010	-0.535
alpha	-0.013	-0.798	-0.005	-1.031	-0.019	-0.848	-0.013	-0.935	-0.019	-0.837
beta	-0.015	-0.903	-0.012	-1.132	-0.023	-0.950	-0.016	-1.048	-0.023	-0.939

Table 3: Mean (over the 90 participants) value of the coefficients that result from the SI algorithm, when each of the structural metric is used as a predictor with the Euclidean distance, for each frequency band.

Components	SC edge weightings									
	NS-FA	NS-bin	NS-MM	NS-RD	FA-bin	FA-MM	FA-RD	bin-MM	bin-RD	MM-RD
1	4e-04	8e-08	1e-04	2e-10	2e-18	0.253	4e-16	7e-15	4e-4	2e-15
2	2e-08	4e-08	3e-06	1e-07	0.348	2e-12	0.247	1e-12	8e-03	8e-12
3	0.344	1e-09	0.014	1e-08	2e-14	7e-03	5e-12	5e-10	0.851	2e-09
4	9e-11	2e-03	0.082	0.018	3e-09	4e-06	3e-08	0.368	0.280	0.695
5	5e-07	0.013	2e-08	1e-03	5e-15	0.281	2e-14	3e-12	0.058	8e-13
6	4e-11	8e-05	5e-07	7e-06	3e-14	1e-10	6e-09	0.196	9e-03	0.450
7	6e-07	6e-13	1e-04	5e-14	3e-17	4e-05	2e-17	2e-15	2e-04	7e-16
8	7e-04	0.017	0.015	1e-03	3e-07	0.018	3e-07	3e-05	0.021	8e-06
FC ₀	0.059	0.182	0.866	0.100	0.339	0.063	0.748	0.241	0.266	0.152

Table 4: p -values resulting from the comparison of the correlation distributions, for each pair of structural edge weightings for the SPL algorithm, in the delta band. Bold numbers indicate the cases for which the distributions were *not* statistically significantly different.

Components	SC edge weightings									
	NS-FA	NS-bin	NS-MM	NS-RD	FA-bin	FA-MM	FA-RD	bin-MM	bin-RD	MM-RD
1	8e-14	1e-10	6e-08	2e-10	5e-15	5e-14	8e-10	7e-07	0.286	2e-06
2	9e-09	3e-08	2e-12	4e-07	0.013	3e-15	0.162	4e-15	0.704	2e-14
3	2e-07	1e-04	1e-09	3e-05	8e-04	5e-03	0.155	2e-06	0.008	2e-03
4	1e-04	2e-09	0.838	6e-10	1e-06	3e-05	3e-06	5e-09	0.054	3e-09
5	8e-07	1e-05	5e-10	1e-07	8e-04	6e-14	0.093	2e-13	2e-05	1e-13
6	5e-14	9e-13	1e-05	1e-12	2e-11	2e-15	3e-04	1e-13	2e-03	1e-12
7	4e-07	2e-05	4e-15	1e-04	0.010	4e-17	0.201	2e-16	0.860	6e-15
8	5e-04	9e-04	1e-09	0.009	0.184	8e-12	0.092	4e-12	0.278	6e-11
9	0.103	5e-06	0.188	2e-04	3e-11	0.878	2e-09	1e-04	0.007	0.001
10	0.283	0.001	0.046	0.003	3e-07	0.372	3e-06	2e-04	0.679	4e-04
FC _o	0.066	0.053	0.763	0.022	0.973	0.037	0.664	0.085	0.457	0.044

Table 5: p -values resulting from the comparison of the correlation distributions, for each pair of structural edge weightings for the SPL algorithm, in the theta band. Bold numbers indicate the cases for which the distributions were *not* statistically significantly different.

Components	SC edge weightings									
	NS-FA	NS-bin	NS-MM	NS-RD	FA-bin	FA-MM	FA-RD	bin-MM	bin-RD	MM-RD
1	2e-19	6e-16	1e-08	6e-16	2e-16	7e-19	2e-05	4e-13	2e-04	2e-13
2	1e-23	2e-15	3e-22	1e-13	8e-26	1e-16	4e-20	11e-09	0.654	1e-07
3	2e-09	4e-12	3e-12	3e-11	4e-07	2e-15	3e-05	2e-16	0.037	6e-16
4	3e-10	4e-09	2e-04	9e-09	2e-04	1e-15	0.073	3e-15	0.719	2e-14
5	4e-07	0.002	2e-11	0.010	4e-05	1e-12	8e-04	2e-11	0.571	3e-10
6	9e-09	0.049	0.021	5e-05	6e-15	5e-14	4e-05	1e-06	2e-07	2e-10
7	8e-12	9e-09	0.041	9e-07	7e-13	3e-15	5e-09	1e-10	0.150	2e-07
8	5e-10	2e-08	3e-08	2e-08	9e-07	3e-16	0.044	6e-16	0.117	1e-15
9	1e-09	0.022	0.338	0.193	6e-17	3e-11	9e-14	5e-04	0.024	0.036
FC _o	3e-05	2e-06	0.689	9e-08	0.847	6e-10	0.410	1e-07	0.214	1e-08

Table 6: p -values resulting from the comparison of the correlation distributions, for each pair of structural edge weightings for the SPL algorithm, in the alpha band. Bold numbers indicate the cases for which the distributions were *not* statistically significantly different.

Components	SC edge weightings									
	NS-FA	NS-bin	NS-MM	NS-RD	FA-bin	FA-MM	FA-RD	bin-MM	bin-RD	MM-RD
1	2e-16	6e-15	4e-03	1e-14	5e-12	2e-19	4e-05	6e-18	0.277	4e-16
2	2e-23	7e-15	2e-23	5e-14	1e-25	2e-12	3e-20	8e-13	0.217	2e-09
3	2e-10	6e-16	5e-15	2e-15	2e-14	7e-20	2e-11	1e-21	0.049	2e-21
4	3e-09	1e-06	1e-12	5e-08	3e-07	2e-17	0.160	4e-16	1e-03	7e-16
5	8e-10	6e-05	0.077	2e-08	3e-11	7e-12	0.027	2e-05	2e-09	3e-09
6	6e-04	7e-03	4e-11	4e-03	0.021	5e-12	0.235	3e-12	0.543	8e-12
7	1e-08	0.681	2e-07	4e-03	3e-14	2e-12	7e-10	2e-06	5e-09	1e-09
8	0.022	0.900	1e-11	1e-05	1e-04	6e-11	0.007	4e-10	1e-10	4e-13
9	1e-06	6e-04	0.558	7e-06	1e-04	7e-09	0.303	3e-05	2e-05	9e-07
FC _o	0.079	4e-04	0.098	1e-05	0.016	9e-05	0.002	7e-07	0.016	1e-08

Table 7: p -values resulting from the comparison of the correlation distributions, for each pair of structural edge weightings for the SPL algorithm, in the beta band. Bold numbers indicate the cases for which the distributions were *not* statistically significantly different.