Supplementary Materials

Automatically targeting the dorsolateral subthalamic nucleus for functional connectivity-guided rTMS therapy

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Supplementary Table 1. The distance between DL-STN coordinates and the AC

	Left DL-STN			Right DL-STN		
	x	***y***	***z***	***x***	***y***	***z***
Our study	-12.14	15.29	-3.22	12.08	15.26	-3.06
Lozano, Ranjan *et al.* 2018	-11.50	14.80	-4.20	12.00	14.90	-4.5

Supplementary Table 2. The subjects that had a distance of 2-3 mm between their individual coordinates and the average coordinates targeted by both raters

		Left DL-STN						Right DL-STN					
Subject	**Rater**	**1st**			**2nd**			**1st**			**2nd**		
		x	***y***	***z***	***x***	***y***	***z***	***x***	***y***	***z***	***x***	***y***	***z***
e282	R1	/	/	/	/	/	/	/	-2.29	/	/	-2.26	/
e371	R1	/	/	/	/	/	-2.05		/	/	/	/	/
e266	R1	/	/	/	/	/	/	-2.03	/	/	/	/	/
e325	R1	/	/	/	/	/	2.95	/	/	/	/	/	/
e330	R1	/	/	/	/	/	-2.05	/	/	/	/	/	/
e282	R2	/	/	-2.32	/	/	-2.23	/	/	/	/	/	/
e371	R2	/	/	/	/	/	-2.23	/	/	/	/	/	/
e266	R2	/	/	/	/	/	/	/	/	-2.13	/	/	/
e325	R2	/	/	/	/	-2.24	/	/	/	/	/	/	/
e330	R2	/	/	/	/	-2.24	/	/	/	/	/	/	/

R1: The first rater; R2: the second rater; 1st: the first time the DL-STN was targeted; 2nd: the second time the DL-STN was targeted.

Supplementary Table 3. The intra- and interrater reliability of DL-STN coordinates with *x*, *y*, or *z* distances higher than 2 mm targeted by both raters

		Left DL-STN			Right DL-STN		
Intrarater	**Rater**	***x***	***y***	***z***	***x***	***y***	***z***
	R1	0.986	0.914	0.996	0.989	0.960	0.998
	R2	0.964	0.899	0.998	0.995	0.902	0.998
		LROI			**RROI**		
Interrater	**Time**	***x***	***y***	***z***	***x***	***y***	***z***
	1st	0.939	0.797	0.992	0.979	0.849	0.993
	2nd	0.959	0.867	0.996	0.967	0.897	0.998

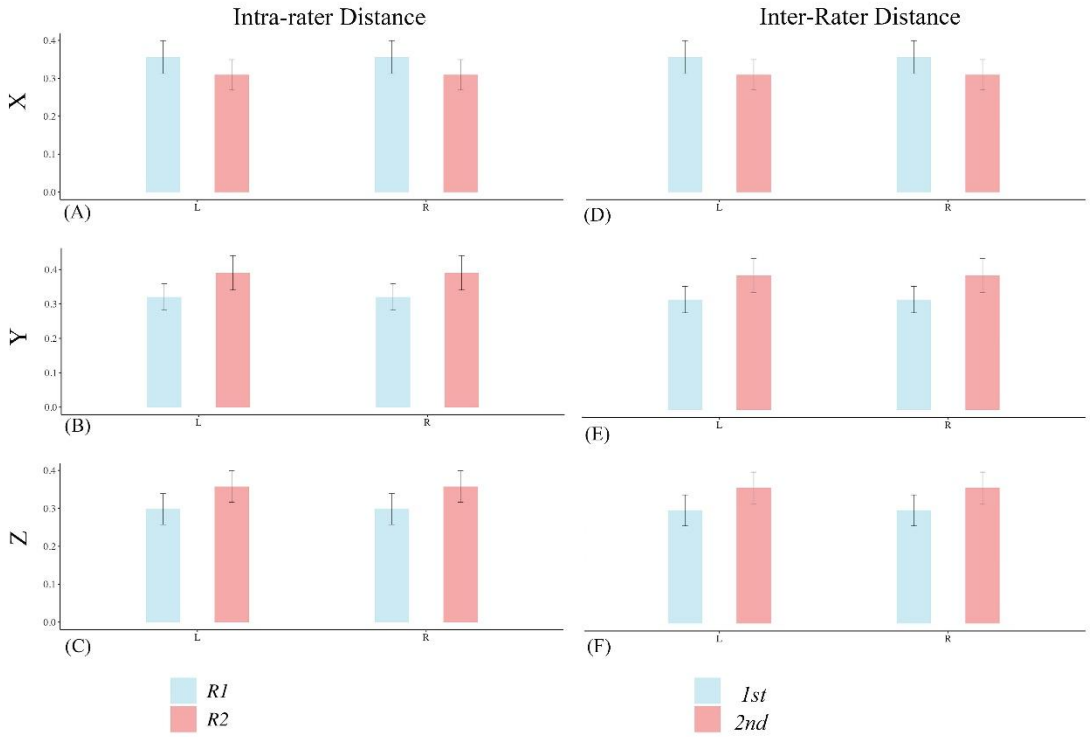
R1: The first rater; R2: the second rater; 1st: the first time the DL-STN was targeted; 2nd: the second time the DL-STN was targeted.

Supplementary Table 4. The peak FC within motor cortices for each subject

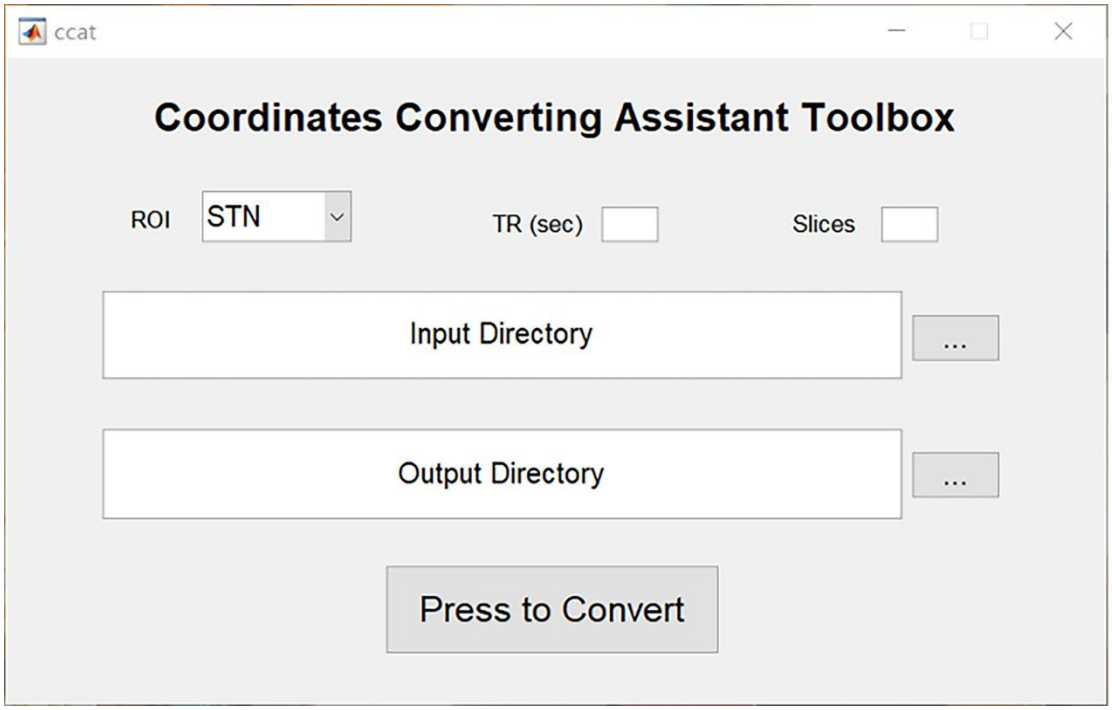
Subject No.	Peak FC (Left DL-STN)		Peak FC (Right DL-STN)	
	Left hemisphere	Right hemisphere	Left hemisphere	Right hemisphere
sub001	0.56	0.40	0.50	0.35
sub002	0.57	0.55	0.55	0.56
sub003	0.53	0.46	0.58	0.46
sub004	0.83	0.82	0.77	0.73
sub005	0.71	0.59	0.75	0.71
sub006	0.54	0.60	0.56	0.68
sub007	0.79	0.75	0.76	0.75
sub008	0.79	0.68	0.65	0.50
sub009	0.69	0.77	0.77	0.92
sub010	0.35	0.39	0.49	0.45
sub011	0.65	0.62	0.67	0.61
sub012	0.56	0.44	0.60	0.50
sub013	0.56	0.57	0.65	0.52
sub014	0.61	0.52	0.60	0.55
sub015	0.51	0.47	0.50	0.51
sub016	0.74	0.83	0.75	0.75
sub017	0.51	0.55	0.60	0.54
sub018	0.79	0.85	0.49	0.64
sub019	0.93	0.93	0.93	0.91
sub020	0.65	0.60	0.60	0.57
sub021	0.59	0.68	0.68	0.66
sub022	0.79	0.75	0.86	0.76
sub023	0.88	0.94	0.81	0.77
sub024	0.64	0.66	0.64	0.65
sub025	0.76	0.73	0.77	0.66
sub026	0.64	0.57	0.70	0.57
sub027	0.54	0.66	0.52	0.58
sub028	0.71	0.71	0.63	0.64
sub029	0.41	0.38	0.35	0.35

Subject No.	Peak FC (Left DL-STN)		Peak FC (Right DL-STN)	
	Left hemisphere	Right hemisphere	Left hemisphere	Right hemisphere
sub030	0.59	0.45	0.65	0.71
sub031	0.76	0.75	0.80	0.82
sub032	0.41	0.48	0.54	0.61
sub033	0.47	0.53	0.37	0.41
sub034	0.68	0.61	0.73	0.70
sub035	0.62	0.71	0.64	0.58
sub036	0.69	0.70	0.57	0.50
sub037	0.66	0.63	0.47	0.52
sub038	0.85	0.75	0.89	0.75
sub039	0.68	0.73	0.64	0.63
sub040	0.53	0.54	0.63	0.58
sub041	0.66	0.64	0.79	0.65
sub042	0.72	0.62	0.74	0.63
sub043	0.89	0.70	0.78	0.70
sub044	0.38	0.42	0.55	0.48
sub045	0.55	0.72	0.76	0.54
sub046	0.41	0.42	0.69	0.60
sub047	0.57	0.52	0.47	0.49
sub048	0.83	0.74	0.78	0.73
sub049	0.54	0.64	0.67	0.78
sub050	0.85	0.86	0.85	0.78
sub051	0.81	0.84	0.73	0.72
sub052	0.62	0.76	0.75	0.70
sub053	0.55	0.69	0.63	0.67
sub054	0.55	0.52	0.80	0.64
sub055	0.81	0.67	0.90	0.85
sub056	0.67	0.63	0.58	0.60
sub057	0.56	0.53	0.59	0.62
sub058	0.52	0.47	0.44	0.42
sub059	0.72	0.74	0.75	0.73

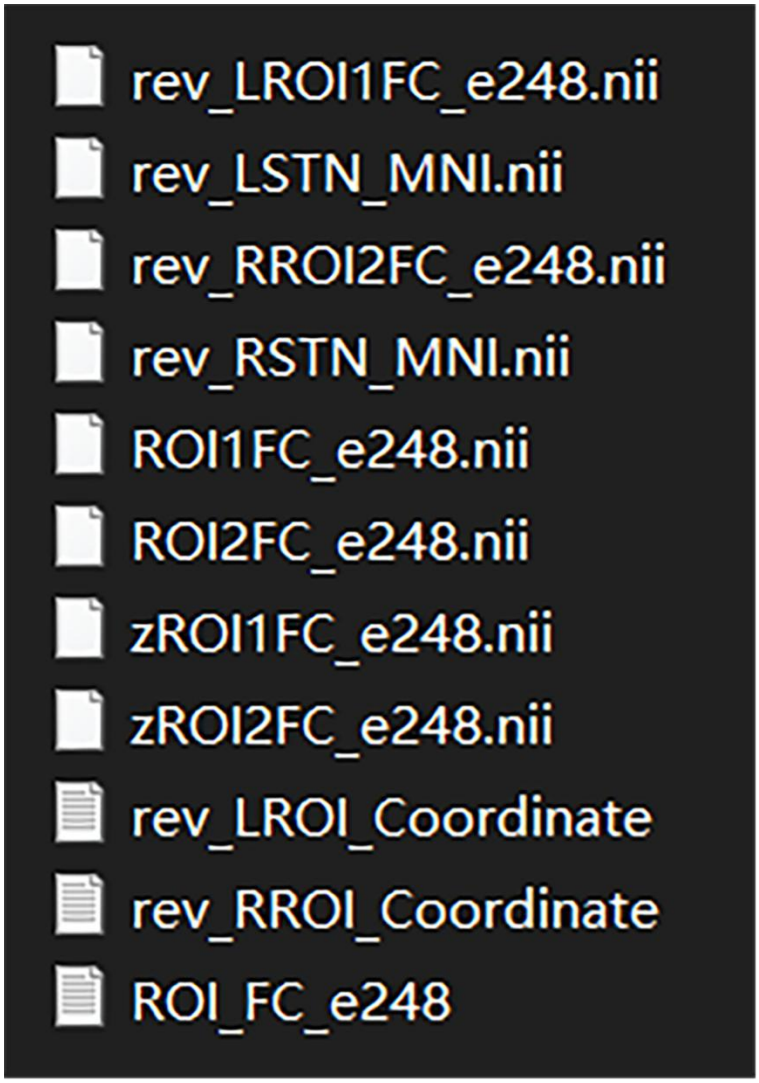
Subject No.	Peak FC (Left DL-STN)		Peak FC (Right DL-STN)	
	Left hemisphere	Right hemisphere	Left hemisphere	Right hemisphere
sub060	0.89	0.88	0.90	0.95
sub061	0.65	0.84	0.62	0.57
sub062	0.45	0.53	0.49	0.46
sub063	0.66	0.74	0.96	0.87
sub064	0.50	0.58	0.51	0.47
sub065	0.55	0.42	0.60	0.55
sub066	0.73	0.72	0.83	0.70
sub067	0.78	0.81	0.74	0.87
sub068	0.89	0.74	0.73	0.63
sub069	0.60	0.50	0.60	0.64
sub070	0.65	0.71	0.77	0.76
sub071	0.89	0.81	0.87	0.76
sub072	0.45	0.34	0.51	0.48
sub073	0.84	0.81	0.64	0.57
sub074	0.64	0.58	0.50	0.53
sub075	0.72	0.74	0.67	0.65
sub076	0.60	0.61	0.66	0.57
sub077	0.75	0.86	0.74	0.83
sub078	0.60	0.49	0.64	0.55



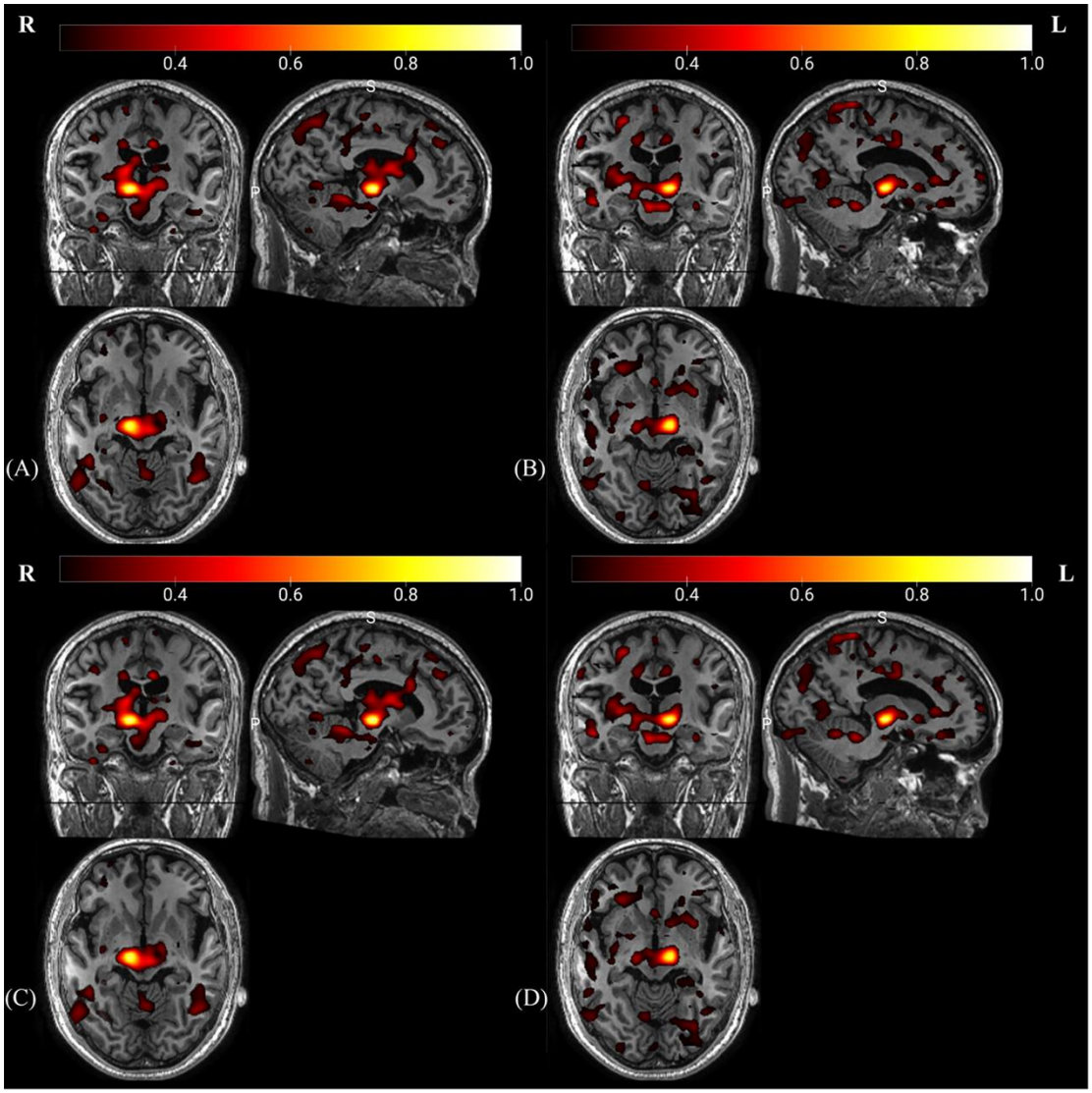
Supplementary Figure 1. The intra- and inter-rater distances for the *x*, *y*, and *z* coordinates. (A)-(C) are intra-rater distances; (D)-(F) are the inter-rater distances.



Supplementary Figure 2. The graphical user interface (GUI) of the "CC-CAT" plug-in.



Supplementary Figure 3. The output results of one subject based on the "CC-CAT" plug-in.



Supplementary Figure 4. The FC of the DL-STN in native space. (A) and (B) the FC of the bilateral DL-STN of one subject using the DPABI 4.3 toolbox; (C) and (D) the FC of the right DL-STN of the same subject using the newly developed "CC-CAT" plug-in.