Figure 1 Non-fatigue brain connectivity map of subject No. 4 (a) in non-fatigue state 0~20 minutes (b) in fatigue state 41~60 minutes
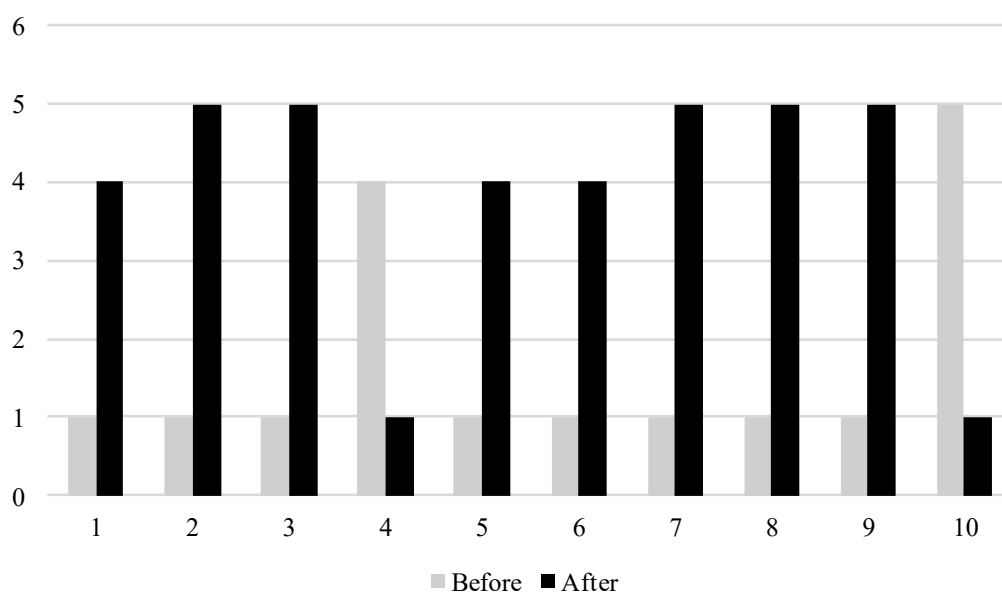

Figure 2 FAS questionnaire results for subject No. 4

Table 1　Top 10 ranking of wPLI for subject No. 4

	1	2	3	4	5	6
1	"C4-CP4"	"F4-FT7"	"C4-Pz"	"FT7-FT8"	"F8-FT8"	"FP1-FT8"
2	"Cz-CPz"	"F8-FT7"	"AF4-Oz"	"Pz-Oz"	"F4-FT7"	"FP1-FT7"
3	"CP4-P4"	"Fz-F4"	"C4-P3"	"F4-FT7"	"FP1-AF3"	"FP2-FT8"
4	"CPz-P4"	"F7-Cz"	"Pz-Oz"	"P3-Oz"	"FP1-C4"	"FT7-FT8"
5	"Cz-CP4"	"FT7-FT8"	"Cz-Pz"	"AF4-F4"	"F8-FT7"	"FC3-FT8"
6	"FC3-C3"	"F7-CP3"	"Pz-O1"	"FP1-AF3"	"FP1-Cz"	"FP1-FP2"
7	"CP4-T8"	"Fz-F8"	"P7-Pz"	"AF4-C4"	"FP1-CP4"	"FP2-Cz"
8	"FCz-C3"	"FT7-FC4"	"Cz-CPz"	"FT7-FC4"	"AF3-Oz"	"F4-FT8"
9	"Fz-C3"	"F7-CPz"	"CPz-Oz"	"C4-Pz"	"FP1-F8"	"O1-Oz"
10	"F7-Cz"	"FT7-C3"	"AF4-O1"	"AF3-Oz"	"P3-O1"	"F3-FC3"

	7	8	9	10	11	12
1	"F7-FT8"	"FP1-C4"	"AF4-CP4"	"FP1-C4"	"FT8-CPz"	"C4-CP4"
2	"FP1-F7"	"FP2-CP4"	"CP4-P4"	"FP1-FT7"	"FT8-C4"	"F8-CPz"
3	"FP1-P4"	"F3-FC3"	"FT8-CPz"	"FP1-Cz"	"AF4-FT8"	"F7-CPz"
4	"FP1-FT8"	"AF4-CP4"	"FP1-C4"	"FP1-Pz"	"FT8-Pz"	"CPz-P4"
5	"FP1-F4"	"C4-P3"	"FT8-C4"	"AF4-CP4"	"F3-FT8"	"FP1-C4"
6	"FP1-CP4"	"C4-CP3"	"FP1-F4"	"FP1-CPz"	"F7-FT8"	"FP1-CPz"
7	"CP4-P4"	"FP1-Cz"	"C4-CP4"	"FP1-F8"	"FP2-FT8"	"C4-P4"
8	"FP1-AF4"	"F3-FT8"	"FP2-CP4"	"FP1-F7"	"CPz-Pz"	"FP1-Cz"
9	"FT8-T7"	"AF3-Pz"	"FCz-CP4"	"FCz-CP4"	"F7-CPz"	"FT8-CPz"
10	"FT8-T8"	"AF3-C4"	"CPz-Pz"	"FP1-FT8"	"F8-C4"	"Cz-P4"

	13	14	15	16	17	18
1	"FC3-CP4"	"F3-FT7"	"C4-CP4"	"FT7-FT8"	"FT7-C3"	"FP2-T8"
2	"CPz-CP4"	"AF4-FT7"	"T8-CP4"	"FT8-T8"	"FT7-P4"	"F8-FT7"
3	"Cz-CP4"	"AF4-FT8"	"F7-CP4"	"FT8-TP8"	"FT7-CP4"	"FP2-F4"
4	"F4-FT7"	"F4-FT7"	"CPz-CP4"	"FP2-T8"	"FP2-FC4"	"FP2-FT7"
5	"C4-CP4"	"F8-FT8"	"F7-FT8"	"FC3-FT8"	"F7-CP4"	"F4-C3"
6	"FP1-AF3"	"FT8-C4"	"CP4-TP8"	"FT8-CP4"	"P4-T8"	"CP4-T8"
7	"F8-CPz"	"F8-T8"	"AF3-CP4"	"FCz-FT8"	"FC4-P4"	"P4-T8"
8	"FCz-CP4"	"F3-FC3"	"F7-F8"	"F4-FT8"	"FP2-FT7"	"F8-FC4"

9	"C3-CP4"	"AF4-F7"	"F8-Pz"	"FP2-Cz"	"CP4-P4"	"C3-T8"
10	"P3-O1"	"F3-FCz"	"FT7-CP4"	"FP2-FC3"	"FC4-CP4"	"FT7-C3"

	19	20	21	22	23	24
1	"FT7-FT8"	"FT7-C3"	"FT7-FT8"	"F8-FT8"	"FP2-FT7"	"F8-FT8"
2	"F8-FT7"	"F8-FC4"	"FT8-T7"	"FP2-FT7"	"FP2-FC4"	"FT7-C3"
3	"FC4-CP4"	"FP2-FC4"	"F8-FT8"	"FT8-CP4"	"F3-F4"	"FCz-FC4"
4	"T7-CP4"	"AF4-FC4"	"AF4-FT8"	"FP2-FC4"	"FP2-T8"	"FC4-TP8"
5	"F8-FC4"	"FC4-C3"	"FP2-FT7"	"FT7-FT8"	"FP2-AF4"	"FP2-T7"
6	"T7-C3"	"FP2-FT7"	"FP2-T7"	"FT8-CP3"	"FP2-T7"	"CP4-P4"
7	"FT7-C3"	"F8-FT7"	"FT8-T8"	"FT7-CPz"	"FP2-FT8"	"F4-T7"
8	"F8-T7"	"FC4-CPz"	"F4-FT8"	"FP2-AF4"	"FP2-F4"	"FP2-FC4"
9	"AF4-FC4"	"FC4-CP4"	"F8-FC4"	"FT8-T8"	"FC3-T7"	"Fz-FC4"
10	"FT7-CP4"	"FC4-C4"	"F8-T7"	"FT8-P3"	"FC4-C4"	"AF4-T7"

	25	26	27	28	29	30
1	"F4-FC4"	"F8-FC4"	"AF4-FT8"	"AF3-F7"	"FT8-CPz"	"FP2-F7"
2	"FP2-FT7"	"AF4-T7"	"FT8-CPz"	"FP2-CPz"	"F3-C3"	"F7-CPz"
3	"FP2-T8"	"FP2-T7"	"F8-FT8"	"FP2-FT8"	"FT7-C3"	"AF3-F7"
4	"FP2-T7"	"FT7-C3"	"F4-F8"	"AF4-CPz"	"FT8-C3"	"F7-CP3"
5	"F8-FC4"	"FP2-FC4"	"FT8-CP4"	"AF3-FT7"	"FT7-CPz"	"FP2-Pz"
6	"FP2-FC4"	"FC3-C3"	"AF4-F8"	"FP2-F8"	"AF4-C3"	"F3-Fz"
7	"FC4-C4"	"C3-T8"	"F4-FC4"	"FP2-F7"	"FP2-C3"	"AF4-F3"
8	"C3-T8"	"FP2-FT7"	"FP2-FT8"	"FP2-FC4"	"F7-O1"	"Fz-FT7"
9	"FP2-F4"	"T7-CP3"	"FT8-Pz"	"FP2-F4"	"AF4-CPz"	"FP2-CPz"
10	"FT7-C3"	"FC4-TP8"	"FT7-C3"	"FP2-Cz"	"C3-Oz"	"FP1-F4"

	31	32	33	34	35	36
1	"FP1-AF3"	"FT7-T7"	"FT8-CPz"	"F3-CP4"	"FT7-FT8"	"C4-CP4"
2	"FP2-AF3"	"FP2-AF4"	"AF4-FT8"	"FP1-CP4"	"FC3-CP4"	"T8-CP4"
3	"FP1-F8"	"F8-TP7"	"F7-T8"	"C3-CP4"	"FT7-CPz"	"FT7-CP4"
4	"FP2-F8"	"F7-FT8"	"F7-CPz"	"F7-F4"	"FP2-F4"	"Cz-CP4"
5	"FP1-F4"	"F8-TP8"	"F7-TP8"	"F7-CPz"	"AF4-FT8"	"C3-CP4"
6	"FP1-FC3"	"FT7-CPz"	"FT8-TP8"	"CP4-P3"	"AF4-CPz"	"FC4-CP4"
7	"AF4-CP4"	"FT7-Pz"	"F4-C4"	"F8-TP8"	"FP1-FC3"	"F7-CP4"

8	"F7-F4"	"FT8-T7"	"FT8-T8"	"F4-O1"	"AF3-F4"	"FT8-CP4"
9	"F3-TP8"	"F8-T7"	"C4-CP4"	"Cz-CP4"	"F4-C4"	"CP4-Pz"
10	"AF4-F3"	"F8-FC3"	"FC4-CP4"	"AF3-F8"	"F8-TP8"	"F7-F8"
	37	38	39	40	41	42
1	"AF4-Fz"	"F7-F4"	"AF4-F8"	"AF4-F4"	"F7-F4"	"F7-T8"
2	"AF4-Cz"	"F7-FT8"	"T8-CP4"	"FP2-F4"	"FP1-Oz"	"AF4-F4"
3	"AF4-FCz"	"F4-Pz"	"T8-CP3"	"F4-C4"	"FT8-CPz"	"F8-T8"
4	"Fz-Cz"	"F7-F8"	"AF4-T7"	"FT7-T7"	"FP1-O1"	"F8-T7"
5	"F7-FT8"	"F4-C4"	"FC3-CP4"	"FT7-TP8"	"FP1-FT8"	"F7-F8"
6	"AF4-FT7"	"F4-FT8"	"AF4-Pz"	"F3-T7"	"FT8-CP4"	"F7-Fz"
7	"AF4-FC4"	"F4-F8"	"F8-CPz"	"F4-CP3"	"F4-P3"	"T7-CP3"
8	"AF3-FT8"	"C4-T8"	"FP2-T8"	"FCz-T8"	"F7-Oz"	"FP2-F4"
9	"AF3-FT7"	"F4-CP3"	"FP2-AF4"	"F4-P3"	"AF3-F8"	"AF3-F7"
10	"AF4-F8"	"FT8-C4"	"FT8-CPz"	"F7-F4"	"F7-O2"	"Fz-F4"
	43	44	45	46	47	48
1	"F8-Pz"	"FT8-T8"	"AF4-T7"	"F7-FT8"	"FT8-T7"	"F3-Fz"
2	"F8-CPz"	"F7-T8"	"F3-FCz"	"Fz-F4"	"AF4-F4"	"FP1-Fz"
3	"F4-FT7"	"F8-T8"	"FT8-Pz"	"F4-FCz"	"F8-FT8"	"F7-F4"
4	"F4-T7"	"F8-FC3"	"AF3-Cz"	"F7-Fz"	"AF3-P4"	"F7-Fz"
5	"F7-F4"	"FT7-C3"	"FT7-T7"	"F8-FT8"	"F8-T8"	"Fz-Pz"
6	"AF4-F4"	"AF3-F7"	"AF3-FCz"	"Fz-CP4"	"Fz-F4"	"Fz-P4"
7	"F7-CPz"	"FT7-CP3"	"FP1-AF3"	"AF3-F7"	"F3-TP7"	"AF4-F4"
8	"FP1-FT8"	"T8-TP8"	"FP1-FT8"	"FP1-FCz"	"AF3-Pz"	"CP3-Pz"
9	"FT8-CPz"	"F3-FC3"	"F3-Fz"	"FCz-CP4"	"F8-P4"	"FT8-T8"
10	"FP2-F4"	"FT7-FC3"	"FP2-T7"	"FP1-Fz"	"F8-TP8"	"AF4-F3"
	49	50	51	52	53	54
1	"F4-FT7"	"F7-Fz"	"F7-FT8"	"FT7-FT8"	"FP1-F3"	"FT7-T7"
2	"F8-T8"	"F7-FT8"	"AF3-P4"	"F7-FT8"	"F4-TP7"	"FC4-T8"
3	"F8-TP8"	"F4-Oz"	"AF3-F7"	"FP1-F4"	"AF4-F4"	"C4-T8"
4	"AF3-FT7"	"F4-O1"	"F7-F8"	"F4-TP7"	"FP1-F4"	"FP2-AF4"
5	"FT7-P3"	"AF3-F7"	"AF3-Pz"	"AF3-FCz"	"AF3-F3"	"Cz-TP8"
6	"F8-P4"	"F4-FT7"	"FT8-T8"	"FT7-T8"	"FT7-FC3"	"FCz-P7"

7	"Fz-FT7"	"FT7-TP7"	"FT7-FC3"	"FT8-CPz"	"F4-P7"	"Cz-T8"
8	"FT7-T7"	"F4-O2"	"F8-CP4"	"AF3-F4"	"AF3-Fz"	"FC4-TP8"
9	"F3-F4"	"FT8-CP3"	"F4-C4"	"AF3-TP7"	"FT8-CP4"	"C4-TP8"
10	"F8-FT8"	"FC3-Oz"	"F8-T8"	"T7-Cz"	"FP2-F4"	"FCz-T8"
	55	56	57	58	59	60
1	"F7-T8"	"F7-T8"	"F3-T7"	"Fz-P4"	"FP2-Fz"	"AF3-FT8"
2	"F3-TP7"	"F4-FT7"	"F3-TP7"	"Fz-Oz"	"FCz-T8"	"AF3-F8"
3	"T8-CPz"	"F7-FT8"	"AF3-F7"	"Fz-Pz"	"FCz-P7"	"F7-T8"
4	"Cz-T8"	"AF4-F4"	"F3-TP8"	"FC3-FT8"	"Fz-P7"	"AF3-T8"
5	"FP2-F3"	"F4-TP7"	"F3-P7"	"Fz-O1"	"Fz-T8"	"F7-FT8"
6	"AF4-F3"	"AF4-F3"	"AF3-T8"	"AF4-T7"	"Fz-CPz"	"FCz-P4"
7	"T8-CP4"	"F7-CP3"	"F3-T8"	"FCz-P4"	"FT7-C3"	"FCz-TP8"
8	"C4-T8"	"FP2-F8"	"AF3-F4"	"FT8-T7"	"Fz-O1"	"AF3-FCz"
9	"T8-Pz"	"F4-T7"	"AF3-FC3"	"Fz-CP4"	"FP2-FCz"	"F8-TP8"
10	"FT8-Cz"	"F3-TP8"	"Fz-F4"	"FP2-T7"	"Fz-Pz"	"FP1-FCz"