

# **Frequency specific contribution of intrinsic connectivity networks to the integration in brain networks**

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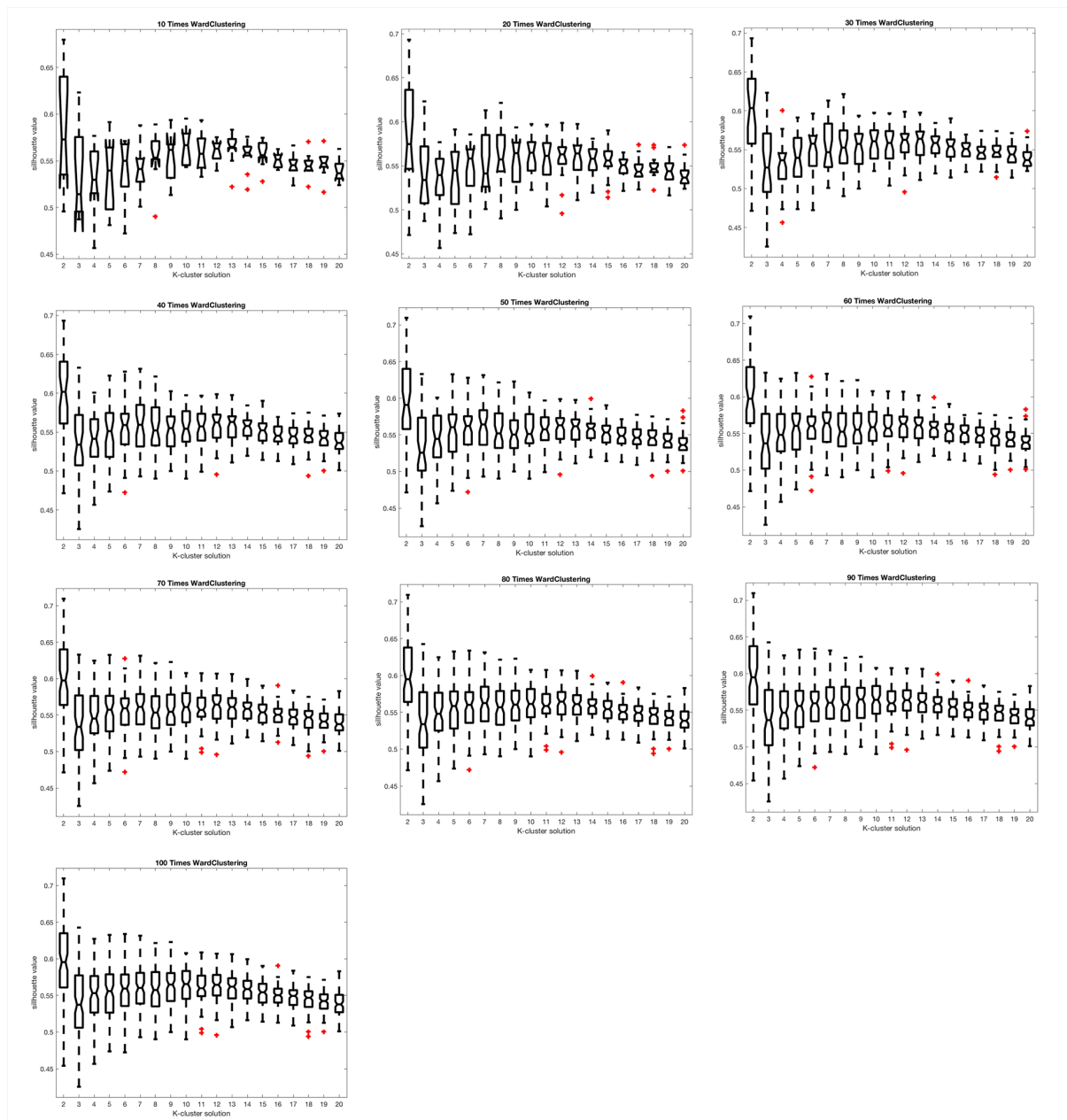
**Supplementary Table S1**

**Supplementary Figure S1-S5**



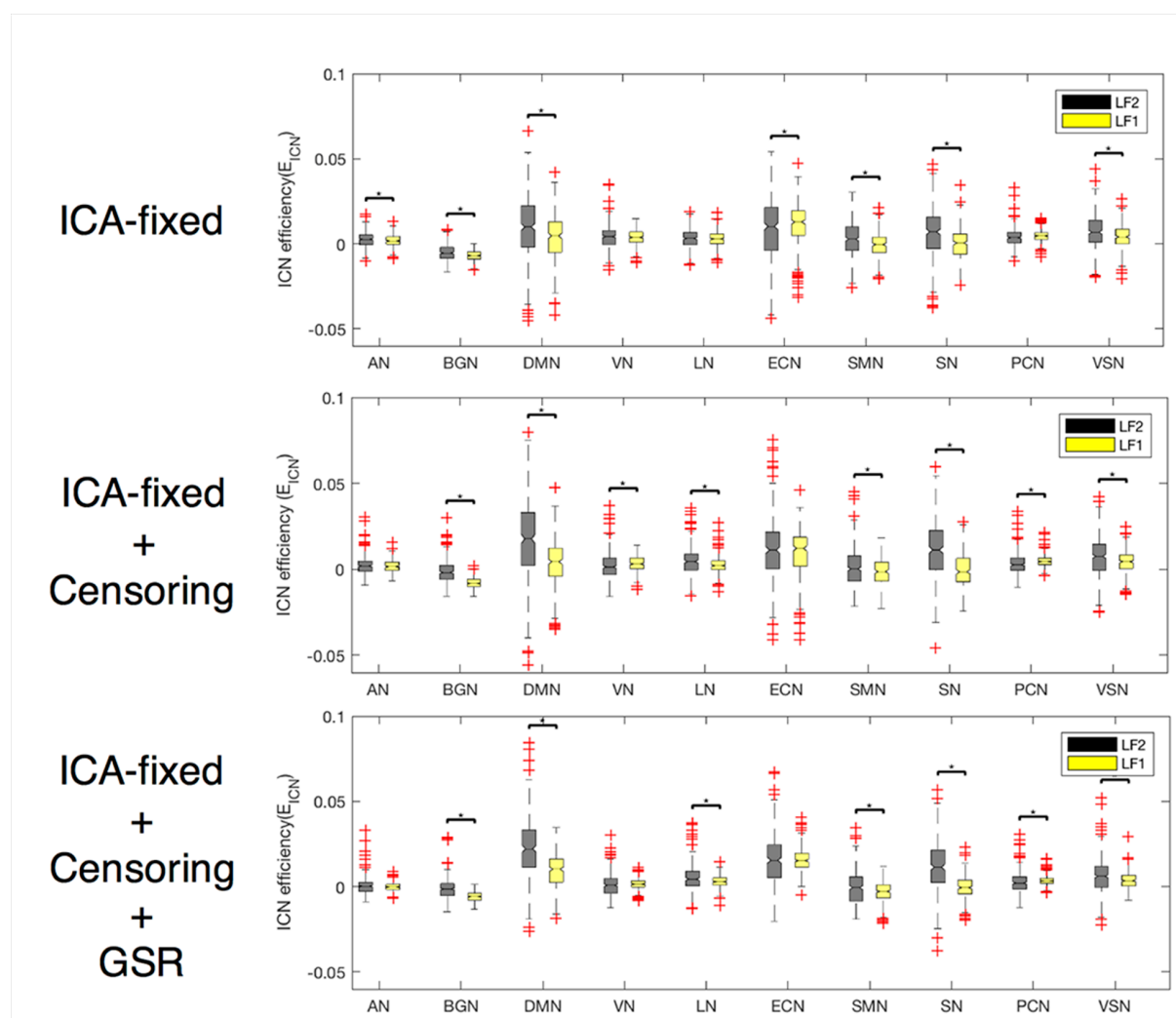
## Supplementary Figure S1. The results of silhouette value according to the number of clustering iterations.

When we repeated the clustering from 10 to 100, the silhouette values always have the highest value when  $k=2$ .



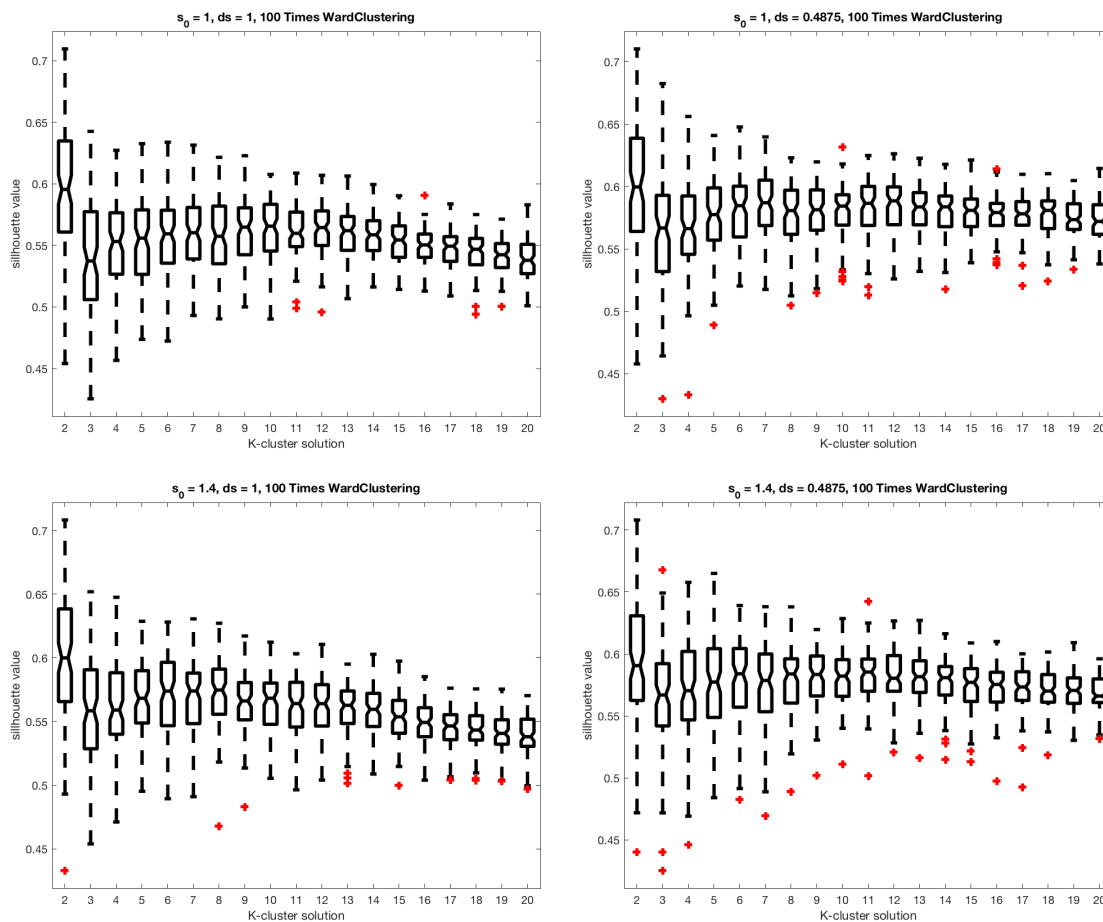
### Supplementary Figure S2. Impact of preprocessing pipeline on $E_{ICN}$ by frequency.

Difference of  $E_{ICN}$  by frequency according to the preprocessing pipeline. The  $E_{ICN}$  results which included the volume censoring step differed from the the  $E_{ICN}$  results which included only the ICA-fixed step in statistical significance of AN, VN, LN, ECN and PCN, but the tendency of  $E_{ICN}$  to frequency was maintained. The  $E_{ICN}$  results which included the GSR and volume censoring step differed from the  $E_{ICN}$  results which included the volume censoring step in statistical significance of VN, but the tendency of  $E_{ICN}$  to frequency was maintained.



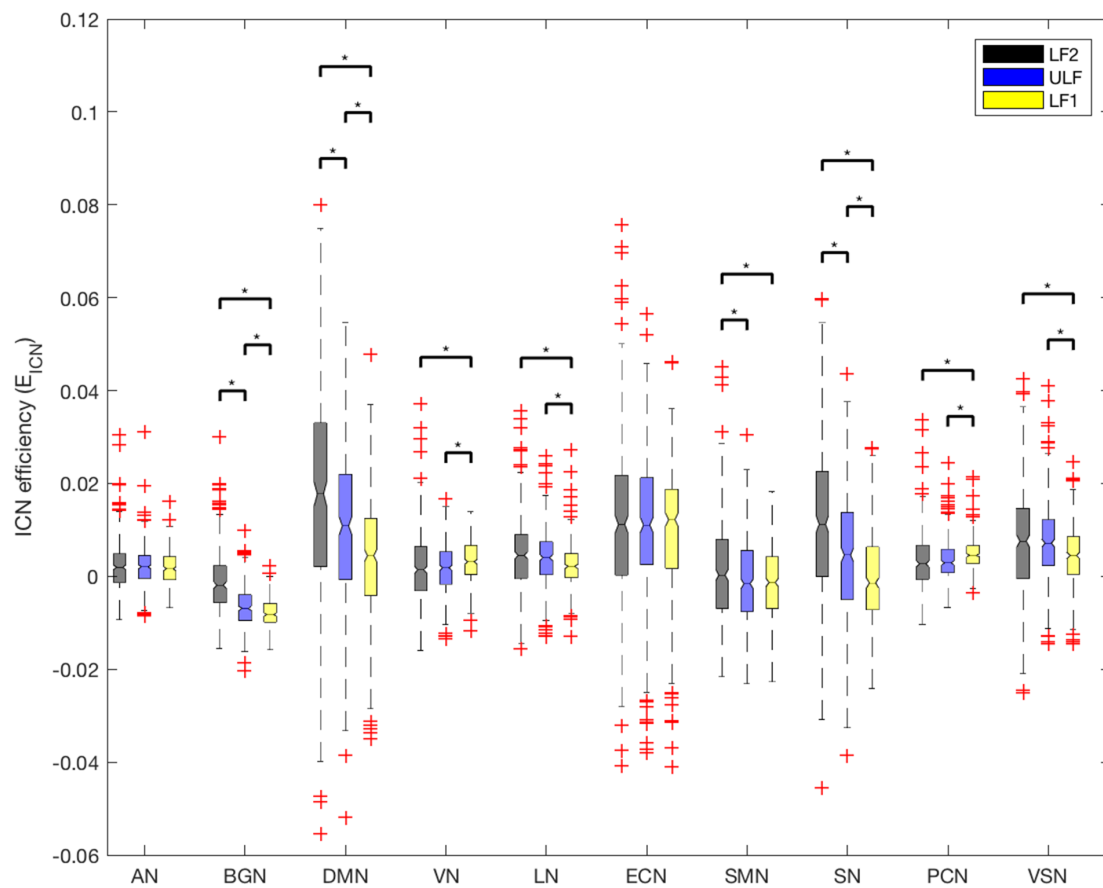
### Supplementary Figure S3. Results of cluster solution in several hyperparameter condition.

In the any conditions, cluster solution 2 had the highest silhouette value, so we used  $s_0=1$  and  $ds=1$ .



### Supplementary Figure S4. The $E_{ICN}$ along the frequency band including uncertain low frequency (ULF)

If the  $E_{ICN}$  is considered in an ULF (0.012 ~ 0.03 Hz) between LF1 and LF2, there is an ICN with a statistically significant difference in ULF from LF1 or LF2, but the tendency of  $E_{ICN}$  to frequency is maintained. Analysis of variance (ANOVA) was performed for each ICN to determine the difference in  $E_{ICN}$  with frequency ( $p < 0.005$  with Bonferroni correction). *Post hoc* two-sample t-tests for differences between the  $E_{ICN}$  of each frequency band were also performed ( $p < 0.01$  with Bonferroni correction).



## Supplementary Figure S5. The characteristics of the connectivity matrix according to sparsity.

(a) Mean degree of connectivity matrix at the sparsity for each frequency. The threshold is the logarithm of the number of whole brain network nodes. At a sparsity of 5% or more, the mean degree exceeds the threshold and satisfies the small-worldness network. (b) The surviving correlation coefficient at the sparsity for each frequency. The mean of histogram for each subject's surviving correlation coefficients are plotted for each case. There were higher surviving correlation coefficient values at LF2 than at LF1. Sparsity at 5% is satisfied at a correlation coefficient of at least 0.3. The top row indicates results at LF1. The bottom row indicates results at LF2.

