

Supplementary Materials: Topological Cycle Graph Attention Network for Brain Functional Connectivity

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1 Cycle Number Quantification

To quantify the number of cycles in the functional backbone versus the original functional graph in subject-level, We first rescale the functional backbone to the same range of the corresponding functional connectivity. Then we compute the number of cycles by decomposing the functional backbone and functional connectivity as a linear combination of the cycle basis \mathcal{C} . The number of cycles is counted as the number of coefficients of the cycle basis that is larger than 0.5 or lower than -0.5. [1]

References

1. Anand, D.V., Chung, M.K.: Hodge laplacian of brain networks. IEEE Transactions on Medical Imaging (2023)