A simulation and comparison of dynamic functional connectivity methods

William Hedley Thompson, Craig Geoffrey Richter, Pontus Plaven-Sigray, Peter Fransson

bioRxiv, pp.212-241, 2017

1. Hutchison RM, Hashemi N, Gati JS, Menon RS, Everling S. Electrophysiological signatures of spontaneous BOLD fluctuations in macaque prefrontal cortex. NeuroImage. 2015;113:257-67.

2. Ma S, Calhoun VD, Phlypo R, Adali T. Dynamic changes of spatial functional network connectivity in healthy individuals and schizophrenia patients using independent vector analysis. NeuroImage. 2014 Apr;90:196-206.

3. Kaiser RH, Whitfield-Gabrieli S, Dillon DG, Goer F, Beltzer M, Minkel J, et al. Dynamic Resting-State Functional Connectivity in Major Depression. Neuropsychopharmacology. 2015;1-9.
6.3 DFC の影響に関する論文
4. Betzel RF, Satterthwaite TD, Gold JI, Bassett DS. Positive affect, surprise, and fatigue are correlates of network flexibility. Scientific Reports. 2017;7(1):520.

6.4 DFC を用いた注意に関する論文
5. Kucyi A, Hove MJ, Esterman M, Hutchison RM, Valera EM. Dynamic Brain Network Correlates of Spontaneous Fluctuations in Attention. Cerebral cortex (New York, NY : 1991). 2016;bw029.

6.5 DFC による意識のレベルに関する論文
6. Barttfeld P, Uhrig L, Sitt JD, Sigman M, Jarraya B, Dehaene S. Correction for Barttfeld et al., Signature of consciousness in the dynamics of resting-state brain activity. Proceedings of the National Academy of Sciences. 2015;112(37):E5219-20.

6.6 脳のネットワークの一時的な特性に関する論文
7. Thompson WH, Fransson P. On Stabilizing the Variance of Dynamic Functional Brain Connectivity Time Series. Brain Connectivity. 2016 Dec;6(10):735-46.
8. Thompson WH, Brantefors P, Fransson P. From static to temporal network theory - applications to functional brain connectivity. Network Neuroscience. 2017;1(2):1-37.
9. Betzel RF, Fukushima M, He Y, Zuo XN, Sporns O. Dynamic fluctuations coincide with periods of high and low modularity in resting-state functional brain networks. NeuroImage. 2016;127(February 2016):287-97.

6.7 DFC の方法におけるバイアスされた分散に関する問題についての論文
10. Thompson WH, Fransson P. The mean-variance relationship reveals two possible strategies for dynamic brain connectivity analysis in fMRI. Frontiers in Human Neuroscience. 2015;9(398):1-7.
11. Thompson WH, Fransson P. Bursty properties revealed in large-scale brain networks with a point-based method for dynamic functional connectivity. Scientific Reports. 2016 Dec;6(November):39156.

6.8 DFC の方法における動的アーティファクトの問題についての論文
12. Laumann TO, Snyder AZ, Mitra A, Gordon EM, Gratton C, Adeyemo B, et al. On the Stability of BOLD fMRI Correlations. Cerebral Cortex. 2016;1-14.

6.9 DFC の方法における統計の問題についての論文
13. Zalesky A, Breakspear M. Towards a statistical test for functional connectivity dynamics. NeuroImage. 2015;114:466-70.
14. Hindriks R, Adhikari MH, Murayama Y, Ganzetti M, Mantini D, Logothetis NK, et al. Can sliding-window correlations reveal dynamic functional connectivity in resting-state fMRI? NeuroImage. 2016;127:242-56.

6.10 DFC 推定値の導出方法にスライディングウィンドウを用いた論文
15. Allen EA, Damaraju E, Plis SM, Erhardt EB, Eichele T, Calhoun VD. Tracking whole-brain connectivity dynamics in the resting state. Cerebral cortex (New York, NY : 1991). 2014 Mar;24(3):663-76.

6.11 DFC 推定値の導出方法に時間微分を用いた論文
16. Shine JM, Koyejo O, Bell PT, Gorgolewski KJ, Gilat M, Poldrack RA. Estimation of dynamic functional connectivity using Multiplication of Temporal Derivatives. NeuroImage. 2015;122:399-407.

6.12 DFC 推定値の導出方法に k 平均クラスタリングを用いた論文
17. Liu X, Duyn JH. Time-varying functional network information extracted from brief instances of spontaneous brain activity. Proceedings of the National Academy of Sciences of the United States of America. 2013 Mar;110(11):4392-7.

6.13 DFC 推定値の導出方法に固有コネクションを用いた論文
18. Leonardi N, Richiardi J, Gschwind M, Simioni S, Annoni J-M, Schluep M, et al. Principal components of functional connectivity: a new approach to study dynamic brain connectivity during rest. NeuroImage. 2013 Dec;83:937-50.
19. Tagliazucchi E, Balenzuela P, Fraiman D, Chialvo DR. Criticality in large-scale brain FMRI dynamics unveiled by a novel point process analysis. Frontiers in physiology. 2012 Jan;3(Feb):15.

20. Tagliazucchi E, Siniatchkin M, Laufs H, Chialvo DR. The Voxel-Wise Functional Connectome Can Be Efficiently Derived from Co-activations in a Sparse Spatio-Temporal Point-Process. Frontiers in Neuroscience. 2016 Aug;10(Aug):1-13.

21. Kang J, Wang L, Yan C, Wang J, Liang X, He Y. Characterizing dynamic functional connectivity in the resting brain using variable parameter regression and Kalman filtering approaches. NeuroImage. 2011;56(3):1222-34.

22. Molenaar PCM, Beltz AM, Gates KM, Wilson SJ. State space modeling of time-varying contemporaneous and lagged relations in connectivity maps. NeuroImage. 2016;125:791-802.

23. Liao W, Wu G-R, Xu Q, Ji G-J, Zhang Z, Zang Y-F, et al. DynamicBC: A MATLAB Toolbox for Dynamic Brain Connectome Analysis. Brain Connectivity. 2014 Dec;4(10):780-90.

24. Smith SM, Miller KL, Moeller S, Xu J, Auerbach EJ, Woolrich MW, et al. Temporally-independent functional modes of spontaneous brain activity. Proceedings of the National Academy of Sciences of the United States of America. 2012 Feb;109(8):3131-6.

25. Kiviniemi V, Vire T, Remes J, Elseoud AA, Starck T, Tervonen O, et al. A sliding time-window ICA reveals spatial variability of the default mode network in time. Brain connectivity. 2011 Jan;1(4):339-47.

26. Lindquist MA, Xu Y, Nebel MB, Caffo BS. Evaluating dynamic bivariate correlations in resting-state fMRI: A comparison study and a new approach. NeuroImage. 2014;101:531-46.

27. Senden M, Reuter N, Heuvel MP van den, Goebel R, Deco G. Cortical rich club regions can organize state-dependent functional network formation by engaging in oscillatory behavior. NeuroImage. 2017;146(Oct):561-74.

28. Ou J, Xie L, Jin C, Li X, Zhu D, Jiang R, et al. Characterizing and Differentiating Brain State Dynamics via Hidden Markov Models. Brain Topography. 2015 Sep;28(5):666-79.

29. Ryali S, Supekar K, Chen T, Kochalka J, Cai W, Nicholas J, et al. Temporal Dynamics and Developmental Maturation of Salience, Default and Central-Executive Network Interactions Revealed by Variational Bayes Hidden Markov Modeling. PLOS Computational Biology. 2016;12(12):e1005138.