

Multi-channel cross-correlation analyses of a electroencephalogram (EEG) experiment recordings using DMC_x^2

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‡Deceased

¶Membership list can be found in the Acknowledgments section.

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Abstract

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Introduction

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$$P_Y = \underbrace{H(Y_n) - H(Y_n|\mathbf{V}_n^Y)}_{S_Y} + \underbrace{H(Y_n|\mathbf{V}_n^Y) - H(Y_n|\mathbf{V}_n^{X,Y})}_{T_{X \rightarrow Y}}, \quad (1)$$

Materials and methods

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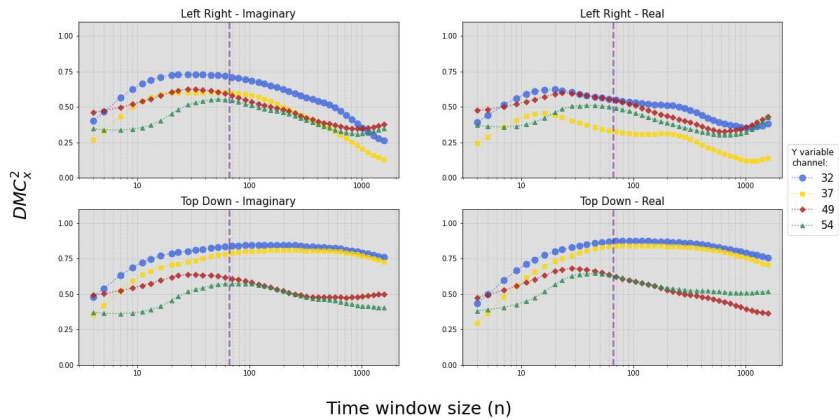


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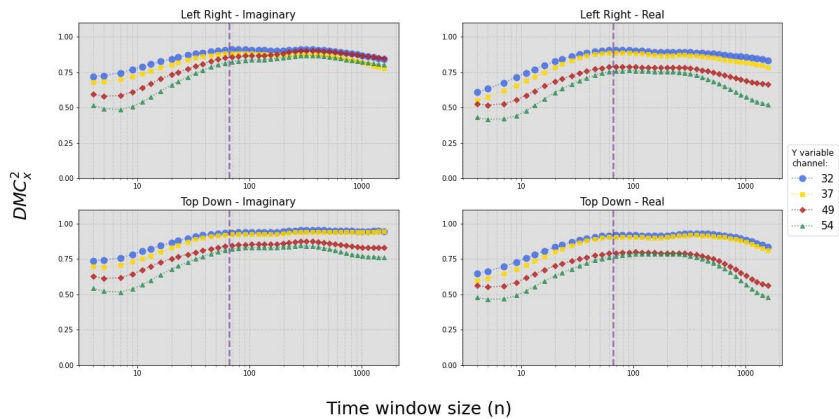


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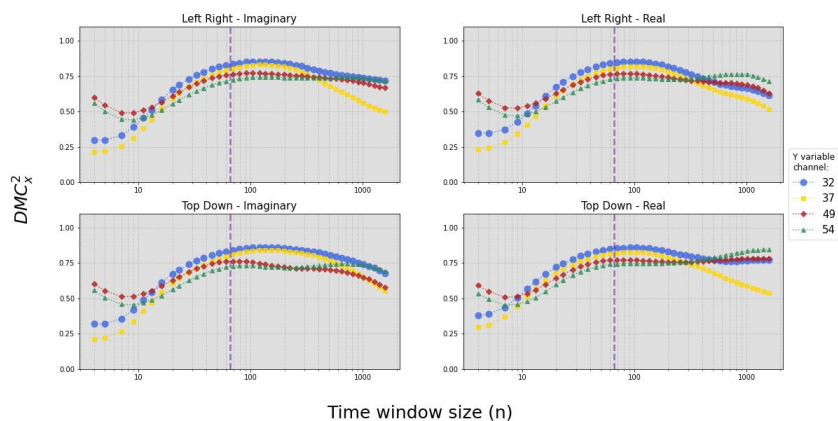


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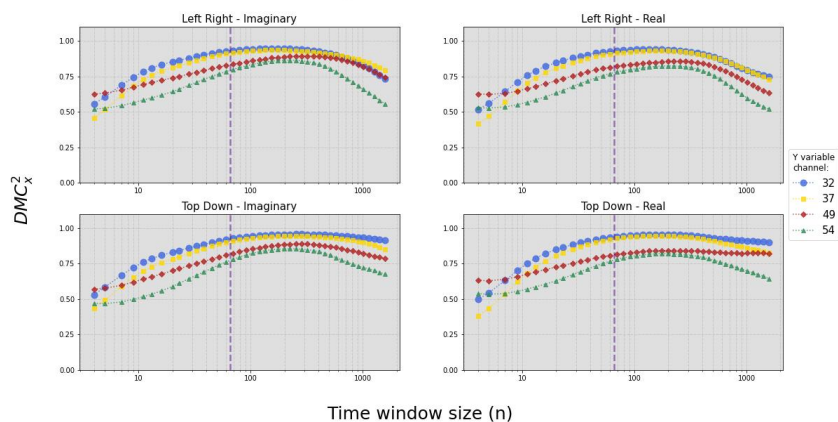


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Results

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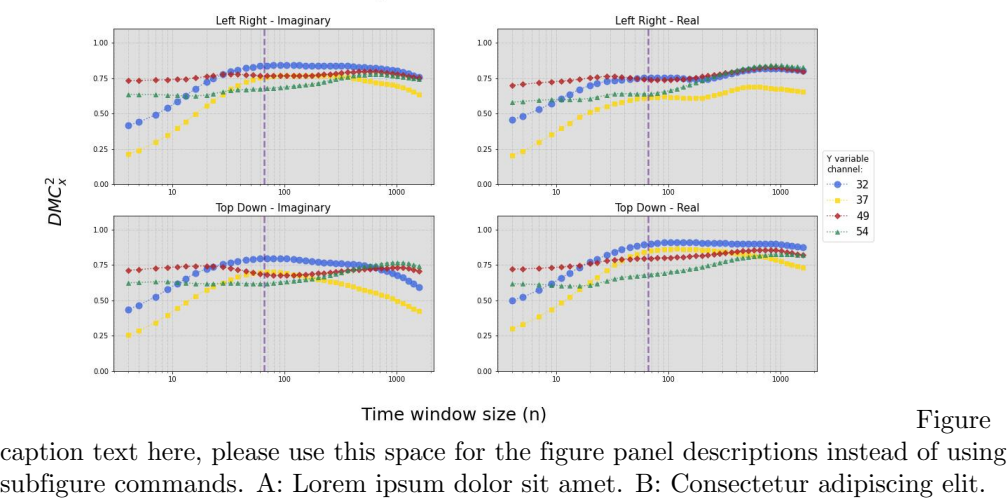


Fig 6. Bold the figure title.
Global stats: mean

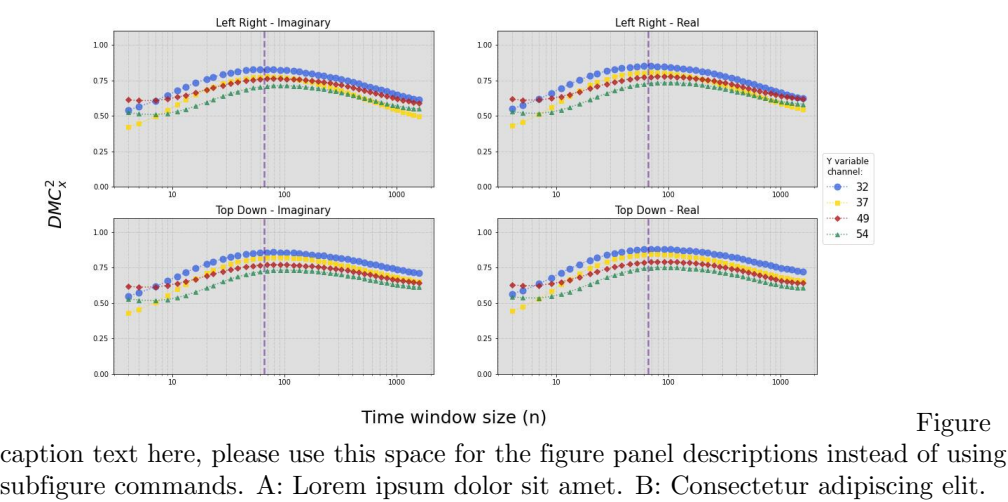


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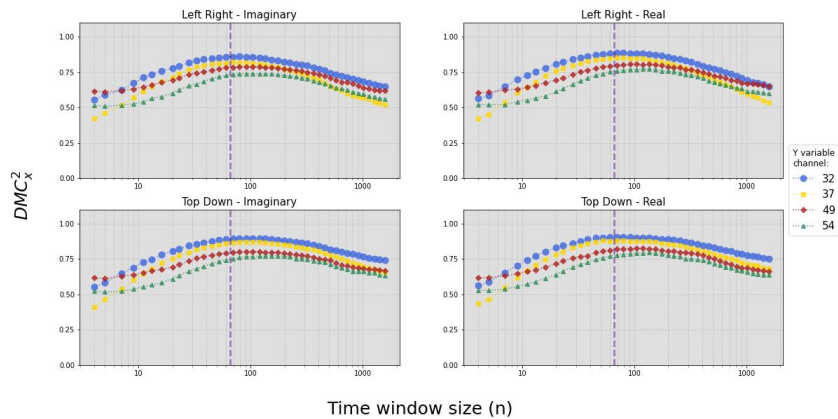


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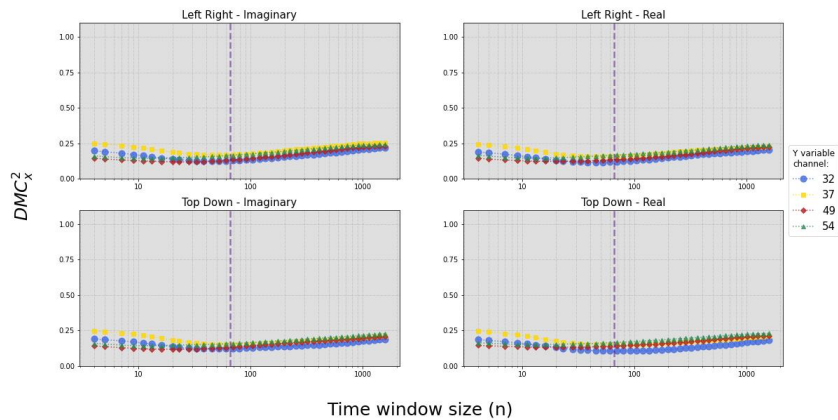


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2. diffuse free particles

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3. increment time by dt and go to 1

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Discussion

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Conclusion

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Supporting information

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References

1. Conant GC, Wolfe KH. Turning a hobby into a job: how duplicated genes find new functions. Nat Rev Genet. 2008 Dec;9(12):938–950.
2. Ohno S. Evolution by gene duplication. London: George Alien & Unwin Ltd. Berlin, Heidelberg and New York: Springer-Verlag.; 1970.
3. Magwire MM, Bayer F, Webster CL, Cao C, Jiggins FM. Successive increases in the resistance of Drosophila to viral infection through a transposon insertion followed by a Duplication. PLoS Genet. 2011 Oct;7(10):e1002337.