




TITLE

Cassidy M. Wagner ^{1*}¶ and Brodie Pearson ^{1*}

¹ Oregon State University ¶ Corresponding author * These authors contributed equally.

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Summary

non-specialist summary – accessible to oceanographers, turbulence people, fluids people

Earth's changing climate is driven by a small energy imbalance that makes up less than 1% of the total energy budget (CITE). Any deviations in the energy budget, no matter how small, may have a large impact on future climate prediction (CITE, maybe scenarios too). To minimize error in climate prediction it is necessary to investigate how ocean turbulence regulates the global energy budget through the transfer, or cascade, of energy across spatial scales and throughout the ocean.

Statement of need

to measure the energy budget of the ocean we need to measure cascade rates

previous and upcoming publications: * pearson 2021 ([Pearson et al., 2021](#)) * pearson sqg paper * wagner paper 1

related software: * flowsieve * fuchs 2022: matlab-based GUI package that does third order structure functions among other things * # Acknowledgements

References

Pearson, B. C., Pearson, J. L., & Fox-Kemper, B. (2021). Advective structure functions in anisotropic two-dimensional turbulence. *J. Fluid Mech*, 916, 49. <https://doi.org/10.1017/jfm.2021.247>