

Read Me: Peter Lake Example

This repository contains R scripts used to compute exit time for Peter Lake during the enrichment experiment that occurred 2013-2015 {Pace, 2017 #1216} {Wilkinson, 2018 #1395}. These scripts estimate the Langevin equation on a mesh following Rinn (2016) adapted from the Matlab code of Arani et al. (in review).

To run the example, execute the R scripts for Step1, Step3, Step4, Step5 in that sequence. There is no Step2 in this example; Step2 is a backtransformation that is not used here.

The other scripts are functions written by the author that are used in the calculations. The .Rdata file is the observed data used in the example.

You will need to use several R libraries named in the scripts.

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Citations

Arani, B. M. S., Carpenter, S. R., Lahti, L., Nes, E. H. V., & Scheffer, M. (in review). Exit Time as a Measure of Ecological Resilience.

Rinn, P., Lind, P. G., Wachter, M., & Peinke, J. (2016). The Langevin approach: an R package for modeling Markov processes. *Journal of Open Research Software*, 4(1), e34. doi:DOI: <http://doi.org/10.5334/jors.123>