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 Bandi & Phillips (2010) using the algorithm of Johannes (2004).

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

Bandi, F., & Phillips, P. C. B. (2010). Nonstationary continuous time processes. In Y. Ait-Sahalia & L. P. Hansen (Eds.), *Handbook of Financial Econometrics: Tools and Techniques* (pp. 139-202). Amsterdam: Holland.

Johannes, M. (2004). The statistical and economic role of jumps in continuous-time interest rate models. *Journal of Finance, 59*, 227-260.