Toolbox for analysis and simulation of *C. elegans* thermotaxis

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This toolbox provides MATLAB codes to extract behavioral components from movement data captured by a Multi-Worm Tracker (Swierczek et al., 2011) and analyze them as described in our paper (Ikeda et al., 2018). Make sure all files and data are in the path, and then run “all\_ver8\_6.m”, which generates a series of .csv files that contain analytical results.

The output files are further rearranged by running “array\_for\_all\_ver8\_6.m” and “average\_for\_all\_ver8\_6.m”, which generates a series of .csv files for thermotaxis simulation. The simulation is launched by running “sim\_ver5.m”.

You can freely use this toolbox at your own risk. Please cite this toolbox (URL) and the papers listed below when the toolbox is used for your publication. Comments, bug reports, and proposed improvements are always welcome.

***References***

Ikeda M, Nakano S, Giles AC, Costa WS, Gottschalk A, Mori I. 2018. Circuit Degeneracy Facilitates Robustness and Flexibility of Navigation Behavior in C. elegans. *bioRxiv* 385468. doi:10.1101/385468

Swierczek NA, Giles AC, Rankin CH, Kerr RA. 2011. High-throughput behavioral analysis in *C. elegans*. *Nat Methods* **8**:592–8. doi:10.1038/nmeth.1625