

Gillespie.jl: Stochastic Simulation Algorithm in Julia

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18 July 2016

Paper DOI: <http://dx.doi.org/10.21105/joss.00042>

Software Repository: <http://github.com/sdwfrost/Gillespie.jl>

Software Archive: <http://dx.doi.org/10.5281/zenodo.59127>

Summary

`Gillespie.jl` (Frost 2016) is a Julia package for stochastic simulation using Gillespie’s direct method (sometimes called the Doob-Gillespie algorithm) (Doob 1945; Gillespie 1977), an approach widely used in many fields, including systems biology and epidemiology. It borrows the basic interface (although none of the code) from the R library `GillespieSSA` by Mario Pineda-Krch (Pineda-Krch 2008), although `Gillespie.jl` only implements the standard exact method at present, whereas `GillespieSSA` also includes other methods, such as tau-leaping, *etc.* `Gillespie.jl` is intended to offer performance on par with hand-coded C code, while maintaining a simple but flexible interface.

References

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