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Peer Review

Review of: "Numerical Prediction of the Steady-State Distribution Under Stochastic Resetting from Measurements"

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The paper offers a novel and practical method for predicting steady-state distributions under stochastic resetting, particularly in systems where propagators or resetting time distributions are unknown. Its strength lies in addressing a significant gap in current methodologies while demonstrating versatility across various experimental setups. The validation through a single colloidal particle, a many-body colloidal system, and an active particle with environmental memory adds credibility and depth to its claims. Furthermore, the adaptability to different resetting rates and its ability to capture nuanced system features underline its potential for broad applications.

A notable area for improvement is the comparison to alternative approaches. The numerical renewal method is presented as advantageous, but it would be helpful to benchmark its performance against other computational or experimental techniques for predicting steady-state distributions. Additionally, the asymmetry and features in the propagator observed in the bug experiment with environmental memory raise intriguing questions. The authors could delve deeper into the origins of these features, such as whether they stem from chiral motion, statistical fluctuations, or trail-following dynamics.

One further question: the impact of sampling rate is noted, but its limits are not rigorously explored. At what point does insufficient sampling lead to qualitatively incorrect steady-state predictions?

Declarations

Potential competing interests: No potential competing interests to declare.

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