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TITLE: Discrete Temimi-Ansari method for solving a class of stochastic nonlinear differential equations

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ABSTRACT:

In this paper, a numerical method to solve a class of stochastic nonlinear differential equations is introduced. The proposed method is based on the Temimi-Ansari method. The special states of the four systems are studied to show that the proposed method is efficient and applicable. These systems are stochastic Langevin's equation, Ginzburg-Landau equation, Davis-Skodje, and Brusselator systems. The results clarify the accuracy and efficacy of the presented new method with no need for any restrictive assumptions for nonlinear terms.

CONTRIBUTION OF THE APPLICANT:

- Literature review.
- Ideas involved.
- The mathematical model and its solution.
- Analysis of the results.
- Writing up the manuscript.

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