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The damped pendulum random differential equation: A comprehensive stochastic analysis via the computation of the probability density function

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**Research highlights**

- Damped pendulum random differential equation is studied.
- The probability density function of the solution stochastic process is computed.
- Mild hypotheses on the random inputs (forcing term and initial conditions) are assumed.
- The analysis considers a wide variety of situations often usual in practice.
- A wide range of examples shows that the results are computationally feasible.

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