

Master's thesis projects in the area of

Computational Mathematics for Stochastic (Partial) Differential Equations

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Differential equations (deterministic or stochastic) arise everywhere in sciences: Newton's law in physics; N -body problems in molecular dynamics or astronomy; populations models in biology; mechanical systems in engineering; the Schrödinger equation in quantum mechanics; stochastic differential equations in finance; etc.

For most of these problems, one can find an exact solution only in exceptional cases . . . one thus must resort to numerical simulations!

My research area is in the development and analysis of efficient numerical methods for simulations of stochastic (partial) differential equations.

If you are interested in a thesis project in this area, please contact me at [David Cohen](#) to discuss possibilities that fit your interests and background.

Examples of possible projects:

- Study drift-preserving numerical integrators for Hamiltonian systems driven by Poisson noise.
- Perform a numerical analysis of Schrödinger's equation with random potential.

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