

LIST OF PUBLICATIONS

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Journal Articles

For preprint see <https://www.epfl.ch/labs/anmc/publications/> or <https://arxiv.org/search/?query=abdulle&source=header&searchtype=all>

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Numerical software

Numerical methods for multiscale partial differential equations

- FE-HMM : a short matlab implementation of 2D and 3D elliptic and parabolic problems with multiple scales. Version of 2009.
- FE-HMM-nonlin : a short matlab implementation of nonlinear elliptic and parabolic problems with multiple scales. Version of 2009.
- DS-FE-HMM a short matlab implementation of 2D and 3D multiscale Stokes to Darcy problems using DG FEM and reduced basis. Version of 2016.
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Numerical methods for ordinary or stochastic differential equations with multiples scales

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- SROCK2: weak second order explicit stabilized integrators for stiff Itô stochastic differential equations. Version of 2012.
- S-SDIRK: weak second order drift-implicit mean-square A-stable integrators for stiff Itô stochastic differential equations. Version of 2013.
- PIROCK a swiss-knife partitioned implicit-explicit orthogonal Runge-Kutta Chebyshev integrator for stiff diffusion-advection-reaction problems with or without noise. Version of 2013.
- SK-ROCK: Optimal explicit stabilized integrator (using second kind Chebyshev polynomials) for stiff and ergodic stochastic differential equations. Version of 2018.