



Stochastic Downscaling Method

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INRIA 2010 Internship Campaign

<http://www-direction.inria.fr/international/PHP/Internship/CandidatsII.php>

In the framework of a partnership with ADEME (french ecology and environment agency), we develop a totally new method based on stochastic differential equations for the simulation of wind at small scales, thanks to stochastic particule methods. The project tackles both modelization and production of a software named *Stochastic Downscaling Method* (SDM).

The student involved in the internship will work at INRIA Sophia-Antipolis, with the project-team TOSCA, and will help comparing SDM with other classical numerical methods. The objective is to compare and analyse on simple test-cases some numerical procedures for the particle movement according to temperature (stratification, roughness...). Naturally, the student will be backed up as far as theoretical issues are concerned, and time will be dedicated to software handling.

Required skills : partial differential equations and/or stochastic differential equations, skills in Fortran95, LaTeX.

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More information (links) :

- SDM website, <http://sdm.gforge.inria.fr>,
- INRIA Sophia-Antipolis, <http://www-sop.inria.fr/>.

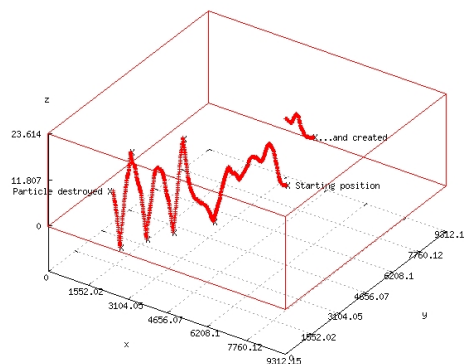


FIGURE 1 – Fluid particle trajectory during a run of SDM