



Paul Van Liedekerke

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personal site

Nationality: Belgian
Date of birth: 07/17/1976

OVERVIEW

Mathematical modeling and method development for complex physical phenomena (fluid dynamics, granular matter flow, living matter: cells and organs). Software development (C++/python).

APPOINTMENTS

Research associate/engineer 2018-
INRIA and IfaDo Leibniz institute, Dortmund (Germany)

- Software development: *TiSim*, a simulator for tissue mechanics with high resolution models.
- Simulation of embryonic development.
- Models for cell migration and Extracellular matrix mechanics.

Expert engineer 2013-2017
INRIA (Team Mamba), Paris

- Model development and investigation of tissue and tumor growth.
- Responsible for EU "Notox" project. Supervision of PhD students.

Postdoctoral researcher 2007-2012
K.U.Leuven (Belgium)

- Food engineering: fluid model development for optimization of egg albumen draining process. Bilateral project with Dutch company MOBA.
- Implementation of a parallelized simulator for complex fluids in the "LAMMPS" software (www.lammps.sandia.gov). Collaboration with EMI Fraunhofer institute, Freiburg.
- Multi-scale modeling framework for tissue mechanics (internal KULEuven project.)

Research engineer/PhD student 2001-2007
K.U.Leuven (Belgium)

- Development of Discrete Element Model for the optimization of granular flow in agricultural machines. Bilateral collaboration with company BASF.
- Model construction for tractor suspensions - using multi-body dynamics software.

EDUCATION

Habilitation à diriger des recherches (Ingénierie) <i>Sorbonne Universités, UPMC Paris VI</i>	TBO 2019
PhD in Bio-Engineering <i>K.U.Leuven, Belgium</i>	2007
Complementary Studies in Environmental Sciences <i>University of Ghent, Belgium</i>	2001
Master of Physics <i>University of Ghent, Belgium</i>	1999

TECHNICAL SKILLS

Programming languages // Software // OS

C/C++, Python, Git, Matlab, OpenMP // Paraview, Deal.II (FEM), OpenFoam // Linux, MS windows and related software.

Mathematical methods

Discrete Element Methods, CFD (mostly Smoothed Particle Hydrodynamics, some FV), Agent-Based Models, Stochastic Differential Equations (master equations, Monte Carlo), FEM.

Languages

Dutch (mother tongue), English (fluent), French (fluent), German (basic understanding, took a few classes.)

TEACHING

Invited lecturer for EU ImageInLife <i>Seignosse, France</i>	09/2018
Visiting professor <i>K.U.Leuven, Faculty of Engineering</i>	2013-2018
Classes in master course <i>UPMC Paris VI</i>	2015-2016

GRANTS/AWARDS

FWO (Fonds voor Wetenschappelijk Onderzoek - Flanders) <i>"A multilevel, integrative approach for the study of cell-matrix mechanics and mechanotransduction during cell adhesion" - (co-promotor).</i>	550.000 euros
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