

Thierry GOUDON

<http://www-sop.inria.fr/members/Thierry.Goudon/>

Born January 1st, 1969, Aix-en-Provence, France

Employments and Education

- Sept. 2007 : Senior Research Scientist INRIA (DRCE)
Head of the Project-Team COFFEE (COMplex Flows For Energy and Environment), INRIA Sophia Antipolis Méditerranée (since '11)
Fellowship at Ecole Centrale Marseille, since '20.
Fellowship at the Dept. of Applied Math, ENS, '11
Head of the Project-Team SIMPAF (SIMulation and Models for Particles And Fluids), INRIA Lille Nord Europe (until '11)
R. Dautray Prize (SMAI-CEA) for works on Radiative Transfer, '08
- 2003-07 : Professor at University of Sciences and Technologies of Lille
with a longterm Senior Research Scientist CNRS appointment: in charge of the animation of the PDEs and Numerical Analysis group
Head of the CNRS Research Network “Interacting Particles”
- 1997–2003 : University Nice Sophia Antipolis, Laboratory J. A. Dieudonné
Associate Professor
Temporarily Research Scientist CNRS, '01-02
Habilitation to conduct research, '01.
- 1994–1997 : University Bordeaux 1, Laboratory of Applied Math. of Bordeaux
Instructorship, Grant of the French Ministry of Research
PhD, '97, advised by K. Hamdache
- 1994 : Military Service
- 1991–1993 : University Bordeaux 1,
Magistère MATMECA, Pluridisciplinary formation in Applied Mathematics, and Mechanics, based on modeling, scientific computing and analysis of complex phenomena, Ranked 1st
MSc in Applied Mathematics and Scientific Computing, Ranked 1st.

Academic activities

- Scientific officer for Mathematics, General Directorate for Research and Innovation, Ministry of Higher Education and Research, since '16; member of the Advisory Boards of CIRM, IHES, CIMPA, IHP, contribution to the national report on AI, follow-up of the Assises des mathématiques...
- Member of the Jury of Agrégation, in charge of the Scientific Computing Exams '05-'16, Deputy President in '16, President '17-'20.
- Chair of the international panel for the evaluation and funding of the mathematical research units in Portugal, '19.
- Chair of the Scientific Board of LJAD/Math. Dept. Univ. Côte d'Azur
- Scientific and Training Advisory Board Archimède Institute (AMU)
- Member of the Scientific Board of the Fondation des Sciences Math. de Paris, '14-'19
- Member of the Scientific Board of CIRM '12-'22
- Co-organisation of the National Meeting of Numerical Analysis '08, Chair of the Scientific Committee
- Member of the Inria Evaluation Committee, '07–11 and '16–'20. Vice-head of research for Inria Lille Nord Europe '07–'11.
- Member of the National Evaluation Committee of Universities in Applied Math, '07–11.
- Member of the Management Board of SMAI, '08-'15
- Member of the Advisory Board of the Prize Blaise Pascal, '11 & '12.
- Member of the Advisory Board of the ANR group “Numerical Methods”, '11-'13
- Responsible of doctoral studies in applied math. at Lille '05–'10.
- Co-organisation of CEMRACS '03 “Numerical Methods for Kinetic and Hyperbolic Equations”

Publications

More than 130 publications in refereed journals:

P. Degond, T. G., F. Poupaud, *Diffusion limit for non homogeneous and non reversible processes*, Indiana Univ. Math. J., 49, 1175–1198, 2000.

T. G., P.-E. Jabin, A. Vasseur, *Hydrodynamic limits for the Vlasov-Navier-Stokes equations*, Indiana University Math. J., 53, 1495–1536, 2004.

T. G., A. Vasseur, *Regularity analysis for systems of reaction-diffusion equations*, Annal. Scient. ENS, 43 (1), 117–141, 2010.

J.-F. Coulombel, T. G., P. Lafitte, C. Lin, *Analysis of large amplitude shock profiles for non-equilibrium radiative hydrodynamics: formation of Zeldovich spikes* Shock Waves, 22(3), 2012.

F. Berthelin, T. G., S. Minjeaud, *Kinetic schemes on staggered grids for barotropic Euler models: entropy-stability analysis*, Math. Comp., 84 (295), 2221–2262, 2015.

J. Barré, D. Chiron, T. G. and N. Masmoudi, *From Vlasov–Poisson and Vlasov–Poisson–Fokker–Planck systems to incompressible Euler Equations: the case with finite charge*, J. Ecole Polytechnique, 2, pp. 247–296, 2015.

S. Labarthe, B. Laroche, T.G., B. Polizzi, T. Phan, M. Ribot, *Biogeography of the gut microbiota: investigating key drivers through a mathematical model*, J. Theor. Biol., 462, 552–581, 2019.

T.G., S. Krell, G. Lissoni, *DDFV method for Navier-Stokes problem with outflow boundary conditions*, Numerische Math., 142(1), 55–102, 2019.

T. G., L. Vivion, *Landau damping in dynamical Lorentz gases*, Bull. SMF, 149(2), 237–307, 2021.

K. Atsou, F. Anjuère, V. Braud, T. G., *Analysis of the equilibrium phase in immune-controlled tumors predicts best strategies for cancer treatment*, Frontiers in Oncology, 12:878827, 2022.

Books

Intégration : Intégrale de Lebesgue et introduction à l’analyse fonctionnelle, Editions Ellipses (Collection Références Sciences), 2011; augmented edition 2021. Mathematics for Modeling and Scientific Computing, Mathematics and Statistics, Wiley, 2016.

Mathématiques pour la modélisation et le calcul scientifique, ISTE, 2017.

Editorial Activities

Coagulation-fragmentation, Comm. Math. Sci., 2004.

Numerical Methods for Hyperbolic and Kinetic Problems, EMS, 2005

Simulation of transport phenomena, particles methods, ESAIM-Proc, 2005.

Analysis and Simulation of Fluid Dynamics, Birkhauser, 2007.

Proc. of CANUM, ESAIM-Proc. 2008

Mathematical models and numerical methods for radiative transfer, SMF, 2009.

Animation of the website mpt2013.fr, with a daily short notice in connection to the Unesco-UMI event “2013, Math. of the Planet Earth”.

Founding editor and Editor in Chief, with D. Arnold of SMAI J. Computational Mathematics since 2015.

Academic editor PlosOne since 2021.

Main invitations

La Sapienza, IPAM-UCLA, ICES-UTexas, UW-Madison, Maryland Univ., Morningside Institute Beijing, U. Federal Rio, PUC-Rio, Fudan Univ. Shanghai, UABarcelona, Univ. Vienna, Univ. Granada...

Industrial Partnerships

Collaborations with Thales and CEA on plasmas physics, with ANDRA on flows in porous media.