

Academic Curriculum Vitae

**Professor in Applied Mathematics - Computational Sciences.
INSA & Mathematics Institute of Toulouse, France.**

Professional Positions

<i>Since 2008</i>	Professor at INSA Toulouse, member of the Mathematics Institute of Toulouse (IMT).
<i>2014</i>	Visiting Research Scientist at JPL/Caltech-Nasa (California) (7 months). Visiting Professor at Univ. California, Irvine (5 months).
<i>1996 - 2008</i>	Ass. Professor (Maître de Conférences) at Grenoble Institute of Technology (Ensimag school). Member of the Applied Math. LJK lab., Grenoble, France.
<i>2004 - 2006</i>	Visiting Research Scientist at INRIA ¹ , France.
<i>2001 - 2002</i>	Secondment to Ministry of Foreign Affairs. Administrative and teaching duty, Indonesia.
<i>1996</i>	Postdoctoral research fellow at Math. lab. of Lisbon, Portugal (5 months).

Research Fields

Mathematical and numerical modeling ; computational sciences ; variational data assimilation ; coupling models - data ; hybrid IA ; optimization ; asymptotic fluid flow models derivation.

Geophysical fluids : river hydraulics / hydrology, glaciers, lavas.

Algorithms recently released :

- 1) In hydrology : HiVDI, a reference algorithm to estimate river discharge from altimetry (SWOT space mission, NASA-CNES et al.).
- 2) In glaciology : estimation of physically consistent bedrock elevation in unmonitored ice-sheet areas (inland Antarctica).

Education

<i>2007</i>	"Habilitation à Diriger des Recherches" (HDR) (Accreditation to Supervise Research) in Applied Mathematics & Computer Sciences. Grenoble I.T., France.
<i>1995</i>	PhD in Mathematics - Computational Sciences. University of Nice - Sophia-Antipolis.
<i>1992</i>	M. Sc. in Computational Sciences, ESSI school, Sophia-Antipolis.
<i>1992</i>	M. Sc. in Mathematics, University of Nice.
<i>1989</i>	Higher School Preparatory Classes, Nîmes.

Highlights

Research

- 47 articles published in international journals since PhD.

Diversified topics, diversified journals and scientific communities.

- Member of the Science Team (ST) of the SWOT mission (NASA-CNES) (since 2014) ST :~50 members, multiples international scientific communities from USA, FR, UK, CA, BR.

- Founder and co-developer of the open-source computing code DassFlow

<https://www.math.univ-toulouse.fr/DassFlow/>.

Co-founder with INRAE of the DassHydro computing platform (Data Assimilation for Hydrology). <https://github.com/DassHydro>.

- Founder and co-manager with P.-A. Garambois of the research team MathsHydro-Num, INRAE-INSA <https://mathhydronum.insa-toulouse.fr>.

- Member of the Algorithm Definition Team (ADT) of the SWOT mission (from 2016). Transfer of algorithms including to international programs, industrial collaborations.

- Scientific P.I. of the CNES research project "river discharge" (9 institutes - labs) (2015-17).

Consult <https://swot.jpl.nasa.gov/hydrology.htm> & <https://swot.jpl.nasa.gov/people.htm?id=39>

- Member of the Steering Committee of the regional "AI & Environnement" program (2019-21).

Period 2016-18 :

- P.I. of the (small) CNES research project "ice-sheets modelling" (2 labs) (2016-18).

INSA Toulouse (Institute of Technology / School) (period 2008-present).

- President of the Restricted Board of Directors (career management policy, research affairs) (2022-xx).

- Member of the Board of Directors and numerous of its committees (2022-xx).

- Member of the Foresight Committee (2018-20). <https://insa2040.insa-toulouse.fr>

- Member of the Scientific Board (2019-22).

- Deputy-Director of the Applied Mathematics department (3y).

- President of the Hiring Committee in Applied Mathematics (2y).

- Lead of the Master Sc. "Computational Sciences", dept of Applied Math. (5y).

- Lead of the International Relations of the Applied Math dept (5y).

- Creation of Open Online Courses : mathematical analyses (x3), finite elements & model reductions, data assimilation.

<https://www.math.univ-toulouse.fr/~jmonnie/Enseignement/Courses.html>

University of Toulouse (UT TIRIS) (period 2019-present).

- Appointed member of the Innovation Project Committee (Toulouse Initiative for Research's Impact on Society -TIRIS-) (2023-XX).

- Appointed member of the Steering Committee for the RTRA STAE-Env'IA Working Group (2019-21).

- Member of the Academic Council UFTMiP (2 y).

Grenoble Institute of Technology (I.T.) (period 1998-2008).

- Lead of the Master Sc. "Modeling-Computing-Simulation", ENSIMAG school (5y).
- PI of the regional project "Numerical prevention of floods" (3 y).
- Member of the Board of Directors of ENSIMAG school (3y).
- Member of the Scientific Board of Grenoble I.T. (3y).
- Member of the Hiring Council in Appl. Math. & Comput. Sc. (3y).
- Member of the Board of Directors of the learned society SMAI (3y).