

Rémi Abgrall

Tel.: +41 786 920 767 Web: <http://www.math.uzh.ch/index.php?id=1819&key1=8882>
Institut für Mathematik, Universität Zürich
Winterthurerstrasse 190, CH-8057 Zürich

Education

- 1981-1985: Ecole Normale Supérieure de Saint Cloud (Mathematics).
 - 1984: "Agrégation", Mathematics (competitive french teaching degree, I was 8th for 128 positions).
 - 1982: Master in Pure Mathematics (University Paris XI, Orsay).
 - 1984: Graduate in Mechanics (University Paris VI).
- 1984-1987: PhD in Mechanics, University Paris VI (Advisor: C. Basdevant, Referees: O. Pironneau, M. Lesieur).
- 1995: Habilitation in Mathematics, University of Nice (Referees: S. Osher, J.P. Vila, A. Lerat).

Positions

- 2020-2025: member of the scientific committee of the 'Direction des Applications Militaires', CEA.
- 2019-2024: International chair at Inria Bordeaux Sud-Ouest (commitment of 12 months over 5 years).
- 2015-2018: Invited professor at Xiamen University (China), one month/year
- 2014-today: Full professor, University of Zurich.
- 2012-2016: William Penny fellow (Laboratory of Scientific Computing, Cambridge University).
- 2012-2016: Scientific advisor at ONERA, France.
- 2008-2013: On leave at INRIA Bordeaux Sud-Ouest, France as Senior Researcher.
- 1996-2013: Professor University of Bordeaux I, then Institut Polytechnique de Bordeaux, France. (Promoted Full Professor in 2001, Distinguished Professor: 2008).
- 1988-1996: Research scientist at INRIA Sophia Antipolis, France.
- 1987-1988: Research engineer at ONERA, Châtillon sous Bagneux, France.
- 1985-1987: Assistant Professor in the Physics department (Ecole Normale Supérieure de la Rue d'Ulm, Paris, France).

Research lines

Numerical schemes for compressible fluid dynamics (high order schemes, multi-component and multi-phase flows, non conservative problems, steady and unsteady problems, uncertainty quantification), Hamilton Jacobi equations, level set techniques, unstructured meshes, curved meshes, model reduction technique for hyperbolic problems. For a complete list of publications, see <http://user.math.uzh.ch/abgrall/publis/>

Distinctions, selection of invited conferences

- 2022: elected SIAM Fellow
- 2014: Invited speaker, International Congress of Mathematics, Seoul. section: Numerical Analysis and Scientific Computing.
- 2008: European Research Council (advanced Grant ADDECCO, 2008-2013, Grant agreement No. 226316).

- 2001-2005: Junior member of Institut Universitaire de France.
- 2001: Prix Gamni-Smai of the French Academy of Sciences.
- 1990: 1st CRAY prize on scientific computing, with A. Dervieux, B. Larrouturou, H. Guillard, J.A Desideri and L. Fezoui.

■ Selection of invited conferences

- 2024:
 - Plenary speaker, XIX International Conference on Hyperbolic Problems: Theory, Numerics, Applications, Shanghai Jiao Tong University, PR China July 1-5, 2024.
 - Plenary speaker, "The International Conference on Mathematical Modeling and Numerical Methods", Beijing June 1-3, 2024
 - Plenary speaker at CANUM 2024, France (May 27-31). It is the yearly conference of the french association of applied mathematics.
- 2023:
 - Invited speaker at the Opening Workshop on the Recent Advances in Numerical Methods for Hyperbolic Conservation Laws, Shenzhen, China, December 5-15, 2023.
 - Plenary speaker at "Finite Volumes for Complex Applications, (FCVA10, October 30-November 3rd, Strasbourg, France),
 - World Congress of IMACS (Roma, September 11-15),
 - "Numerical Aspects of Hyperbolic Balance Laws and Related Problems" (Cortona, Italy, June 19-23)
 - The 7th International Conference on Scientific Computing and Partial Differential Equations (SCPDE23, May 22-26, Hong Kong),
- 2021: Plenary speaker at ICMMES 2021 (07/12-16, virtual) <https://www.icmmes.org/icmmes2021/>
- 2020: Invited speaker in the conference held in honor of the 60th birthday of G. Puppo (La Sapienza, Roma, 02/3-6). I also was invited to workshops in China (Shanghai, Shenzhen) that have been canceled because of the CORONA pandemics.
- 2019:
 - invitation to CSE symposium at the University of Toronto during 05/21-22 (Future Challenges and Opportunities in Computational Science and Engineering)
 - invited speaker at the 11th international conference on Scientific Computing and Applications, Xiamen (China), 05/27-30
 - I had to cancel invitations to the International Conference on Interface Problem in Fluid and Solid, June 18-21, 2019, South China Research Center for Applied Mathematics and Interdisciplinary Studies(CAMIS), South China Normal University, Guangzhou, China) and the 8th International Symposium on Physics of Fluids (ISPF8), which will be held in X'ian (China), 10-13 June 2019
- 2018: Conference in honor of Prof. P.L. Roe 80th birthday, 07/4-6, Cambridge (UK)
- 2017: Conference in honor of Prof. C.W. Shu 60th birthday, Brown University, 01/4-6.
- 2016: Plenary Speaker: XVI International Conference on Hyperbolic Problems: Theory, Numerics, Applications, Aachen (Germany), 08/1-5.
- 2015: Plenary speaker at:
 - European Conference on Numerical Mathematics and Advanced Applications (ENUMATH), Ankara (Turkey), 09/14-18.
 - International Conference on Numerical Mathematics and Scientific Computing, 08/16-19 in Nanjing, China. Satellite conference of the ICIAM
 - Applied Mathematics, Modelling and Computational Science (AMMCS) Congress

- and the annual meeting of the Canadian Applied and Industrial Mathematics Society (CAIMS), Waterloo, Canada, 06/7-10
- 2014: Plenary conference at the World Congress on Computational Mechanics conference (WCCM-ECCM-ECFD), Barcelona, 07/20-25.
 - 2014: Invited conference at the International Congress of Mathematics, Seoul. section: Numerical Analysis and Scientific Computing.
 - 2012: Plenary speaker at ICOSAHOM, Tunis, 06/25-29.
 - 2010: Plenary speaker at the 7th International Conference on Computational Physics (ICCP7), Beijing, 05/17-20

█ Editorial duties

- Since September 2015: Editor in Chief of the Journal of Computational Physics.
- July 2011-August 2015: Co-editor in Chief of the International Journal on Numerical methods in Fluids.
- Associate editor of: Journal of Computational Physics (2003-August 2015), Mathematics of Computation (2010-2017), Journal of Scientific Computing (2007-today), Computers and Fluids (2001-today), Advances in Applied Mathematics (2008-today), Communication on Applied Mathematics and Computation (2018-today), M2AN (2002-2008), Communication in Computational Physics (2017-today), M3AS (2020-today), M3AS (2019-today). Collections: Mathématiques et Application (Springer), Series in Applied and Numerical Mathematics (de Gruyter, 2017-today), Science China (2023-). Senior editor of MATCOM (2021-).

█ Miscelleneous (selection)

I have been member of the "Comité National des Universités" (2003-2007, promotion of professors), of the National committee of CNRS (2008-2012), France. (hiring and promotion of CNRS researchers)

I was member of the scientific council of CERFACS (2005-2020). Since 2018, Since 2014, I am councilor of the Swiss National Science Foundation, division 2 (grant evaluation, some academic positions are funded by SNSF), this position will go until 2025. In 2012-16, I was William Penny Fellow (Laboratory of Scientific Computing, Cambridge University). I have been responsible of GAMNI-SMAI in France, then treasurer of ECCOMAS (2013-2017), founding member (with J.F. Molinari and A. Abdule, EPFL) of Swicommas (Swiss chapel of ECCOMAS).

With P. Chinesta (ENSAM, France) and O. Allix (ENS Paris-Saclay, France), I was co-chairman of the organisation of the World Congress on Computational Mechanics Conference (WCCM 2020) which was held online in Paris in 1/11-15 2021 (\approx 3500 participants). I was vice-chairman for Fluid Mechanics.

I have co-organised several smaller meetings. A selection of recent activities is:

- February 25-March 1st, 2024, (together with M. Garavello (Milano), M. Lukacova (Mainz), K. Trivisa (College Park) in Oberwolfach: Hyperbolic Balance Laws: modelling, analysis, and numerics.
- in August 2022, MULTIMAT (10th International Conference on Numerical Methods for Multi-Material Fluid Flow) in Zürich. About 150 participants are expected from National Labs (US, France, Russia, China, UK).
- 28 Feb - 6 Mar 2021 (together with M. Garavello (Milano), M. Lukacova (Mainz), K. Trivisa (College Park) in Oberwolfach: Hyperbolic Balance Laws: modelling, analysis,

and numerics (hybrid meeting)

- in 2017 (together with P. Sidhartha Mishra, ETH), NUMHYP17, May 28th-June 2nd, <https://www.math.uzh.ch/nmhp17/index.php?id=26>
- in 2015 (together with Pr. Th. Sonar (Braunschweig) and A. Meister(Munster)) in Oberwolfach "Recent developments in the numerics of hyperbolic conservation laws",
- in 2019, 2017, 2015, 2013: together with Pr. M. Dumbser (Trento), C.D. Munz (Stuttgart) and T. Toro (Trento). we have organised HONOM (European Workshop on High Order Nonlinear Numerical Methods for Evolutionary PDEs: Theory and Applications) in Madrid, Stuttgart, Trento, Bordeaux. In Bordeaux, I was the main organiser. The next one should be in Braga (Portugal), 04/04-08, 2022.

In 2017, I was member of the scientific committee of the SIAM-CSE conference in Atlanta. I am member of the scientific committee of the International Conference on Numerical Methods for Multi-Material Fluid Flow (MULTIMAT). I am also member of the Executive board of the ICCFD conference (International Conference on Fluid Dynamics).

In 2023, I am a member of the scientific committee of "The 2024 International Conference on Hyperbolic Problems: Theory, Numerics, and Applications (HYP2024)", to be held at Shanghai Jiao Tong University, Shanghai, China, on July 1-5, 2024