

Born June 23, 1959. Nationality: french.

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### Education:

- 1987: These d'Etat (Habilitation) in mathematics, University Paris IX Dauphine.
- 1983: PhD in mathematics, University Paris IX Dauphine (advisor: Pierre-Louis Lions).
- 1979-83: Student at Ecole Normale Supérieure, Paris.

### Employment:

- 2007-...: Professor, Université Pierre et Marie Curie (exceptional class, the highest in France),
- 2007-2016: Institut Universitaire de France,
- 1997-2007: Professor, Ecole Normale Supérieure, Paris.
- 1993-1997: Professor, Université Pierre et Marie Curie, Paris.

### Scientific responsibilities:

- 2015-...: Head of division of mathematics, European Acad. Sc. (EURASC),
- 2013-...: Head of Laboratoire Jacques-Louis Lions,
- 1989-...: INRIA collaborator and founder of team Bang (Scientific area: mathematical modeling in biology and medicine including tissue growth and cancer therapy), now Mamba.

### Plenary lectures:

- 2014: Plenary lecture at ICM, Seoul (Free boundary problems and models of tumor growth),
- 2011: Plenary invited lecture at ICIAM, Vancouver (Constrained H.-J. equation and evolution),
- 1994: Invited lecture (Section PDEs) at ICM, Zurich (kinetic equations, kinetic formulations).

### Representative monograph.

- Parabolic equations in biology. Lecture Notes on Mathematical Modeling in the Life Sciences. Springer (2015).
- Transport equations in biology. L. N. Birkhauser (2007).
- Kinetic formulation of conservation laws, Oxford Univ. Press (2002).

### Some research contributions:

- G. Barles, BP. Math. Model. Numer. Anal. Vol. 21 (1987) 557–579. *In this paper we have introduced the method of semi-relaxed limits which is now standard in the use of viscosity solutions of Hamilton-Jacobi equations.*
- F. Golse, BP, R. Sentis C. R. Ac. Sc. T. 301, Série I, No 7 (1985) 341–344. *We introduce the now called kinetic-averaging lemmas.*
- P.-L.Lions, BP. *Global smooth solutions of the Vlasov-Poisson system in three dimensions.* Math. Inventiones 105 (1991) 415–430.
- P.-L. Lions, BP, E. Tadmor. J. of A.M.S. Vol.7(1), (1994) 169–191. *We introduce the notion of kinetic formulation of hyperbolic conservation laws*
- P.-L. Lions, BP, P.E. Souganidis. CPAM vol. 49 (1996), 599–638. *We solve the long standing problem of global existence for the hyperbolic system isentropic gas dynamics system.*
- Mathematical Tools for Kinetic Equations. Bull. A.M.S. 41 (2) (2004) 205–244. *A survey of recent progresses in methods for kinetic equations.*
- P. Michel, S. Mischler, BP. J. Math. Pures et Appl., Vol. 84, (2005), No. 9, 1235–1260. *We introduce the notion of generalize drelative entropy for problems with growth.*

**Editorial responsibilities:**

- Editorial board (Journals) Comm. in P.D.E., Calcolo, DCDS(B), Methods and Appl. of Anal., M3AS, Milan J. of Mathematics, Kinetic and related models, Bol. SeMA, NoDEA, Comm. Math. Sc., IMA J. biology and medicine, SIAM J. Analysis (1995–2006),
- Editorial committees (book series) : Series on Adv. in Math. for Applied Sciences; Frontiers in Mathematics (Birkhauser); Versita de Gruyter Book Publishing Program in Mathematics; CEMPI Subseries LNM/LNP (Springer),
- Editor in chief du journal Model. Math. Anal. Num. (SMAI, EDPSciences), 1997-2005.

**PhD supervisions (year of defense, subject and current position):** 23 PhD students, 4 are postdocs, 14 have permanent academic jobs among them

**Invited presentations at major conferences and research schools.**

- 27th congress of Nordic mathematicians celebrating the 100th year of Mittag-Leffler Inst. (2016)
- Plenary talk ICM, Seoul (2014)
- Plenary talk ICIAM, Vancouver (2013)
- IMPA 50th birthday, Rio (2002)
- Invited talk (PDEs), ICM, Zurich (1994)

**Awards, distinctions and visibility:**

- 2016: Member of Academia Europaea.
- 2015: Grand Prix INRIA-Académie des Sciences, Paris (one the 12 Grand Prix yearly awarded for all sciences).
- 2013: Blaise Pascal award and member of European Academy of Sciences (EURASC).
- 2007-16: Institut Univ. de France, senior member.