

# Curriculum Vitae

JEAN-PIERRE DEMAILLY

Born in September 25, 1957 in Péronne (Somme)  
Institut Universitaire de France, Chair of Analytic Geometry  
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## Doctoral studies and early research work

- 1978-1979 3rd Cycle Thesis ( $\simeq$  PhD Thesis): *Croissance des fonctions holomorphes sur un fibré à base de Stein et à fibre  $\mathbb{C}^n$ , et sur une surface de Riemann* defended on December 15, 1978 at the University of Paris VI under the direction of Henri Skoda.
- 1979-1982 State Thesis ( $\simeq$  Habilitation): *Sur différents aspects de la positivité en analyse complexe*, defended on October 19, 1982 at the University of Paris VI under the direction of Henri Skoda (the subject of the so-called “Second Thesis” was posed by Louis Boutet de Monvel).

## Career

- Sep. 1979 Appointed researcher at the CNRS LA 213 (Univ. Paris VI).
- 1980-1981 Military service in the Navy (as associate instructor of mathematics at the “Navy School” in Brest).
- Jan. 1983 Appointed professor at the University of Grenoble I (Institut Fourier).
- Jan. 1987 Promoted to the so-called “1st class” of professors.
- Sep. 1991 Appointed junior member of IUF.
- Sep. 1993 Promoted to the so-called “exceptional class” of professors.
- Apr. 1994 Appointed corresponding member of Académie des Sciences de Paris
- Sep. 2002 Appointed senior member of IUF.
- Dec. 2007 Appointed permanent member of Académie des Sciences de Paris.

## **Awards and Scientific Distinctions**

- 1981-1982 Bronze Medal of the CNRS.
- 1983 Rivoire Prize, awarded by the University of Clermont-Ferrand.
- 1986 Peccot-Vimont Prize, awarded by the College of France.
- 1987 Career Prix, awarded by the Academy of Sciences of Paris.
- 1989 IBM Science Prize for Mathematics.
- 1991 International Dannie Heineman Prize, awarded by the Academy of Sciences of Göttingen.
- 1994 Mergier-Bourdeix Prize, Grand Prix of the Academy of Sciences of Paris.
- 1994 ICM invited speaker in Zürich, theme:  *$L^2$  methods and effective results in algebraic geometry.*
- 1996 Humboldt Prize for international collaboration, Max Planck Society.
- 2006 Simion Stoilow Prix of the Romanian Academy (together with Mihai Paun).
- 2006 ICM plenary speaker in Madrid, theme: *Kähler Manifolds and Transcendental Techniques in Algebraic Geometry.*

## **Administrative Responsibilities**

### **1. National Responsibilities**

- 1987/06-1991/09 Appointed member of the National Committee of Universities (CNU, former CSU, section 23-03).
- 1991/09-1992/12 Appointed member of the National Committee for Scientific Research, CNRS (I resigned due to the birth of a child). Since then I had participated in many different Committees of evaluation for French Mathematics Laboratory (Ecole Polytechnique, Bordeaux three times in 1990, 1994 and 2000, Institut de Mathématiques de Jussieu, Caen, Poitiers, IHES...).
- 1993-1997 Member of the National experts Committee of Doctoral Supervision premium. I am or have been a member of various mathematical Societies or Councils (SMF, AMS, CIMPA, Scientific Committee Sessions “l’Etat de la Recherche” of SMF from 1995 to 1998).
- 2011-2012 Member of the National Committee for Junior IUF positions
- 2013-2014 Member of the National Committee for Senior IUF positions

### **2. Local Responsibilities**

- 1983-1998 I founded the seminar “*Complex Analysis and Geometry*” at Institut Fourier and had been the chief from 1983 to 1998.
- 1992-2003 I have been in charge of the “*Summer School of Mathematics of Grenoble*” for more than 10 years.
- 2003-2006 I served as Director of the UMR 5582 of CNRS (Institut Fourier).

### **3. Editorial Responsibilities**

- 1991 *Journal für die reine und angewandte Mathematik*, Associate Editor.
- 1991-1995 *Journal of Geometric Analysis*.
- 1993-2006 *Annales de l’Institut Fourier*, member of the Editorial Board, and then Editor-in-

Chief from May 1998 to May 2006.

- 1994-(present) *Comptes-Rendus Mathématique of the French Academy of Sciences*.
- 1995-2013 *Journal de Mathématiques Pures et Appliquées*.
- 1997-2002 *Inventiones Mathematicae*.
- 2010-(present) *Annales Polonici Mathematici*.
- 2011-(present) *Rivista di Matematica della Università di Parma*.
- 2011-(present) Editor-in-Chief of *Comptes-Rendus Mathématique* (Académie des Sciences).
- 2013-(present) Chair of the international Committee of the mathematical branch of the *Epi-sciences e-publication project*.

### Affiliations

- Member of the SMF (Société Mathématique de France).
- Member of AFUL (Association Francophone des Utilisateurs de Logiciels Libres).
- President (2003 to present) of Groupe de réflexion disciplinaire sur les programmes (GRIP - association law 1901, which I founded in June 2003 and was declared officially since July 2005). GRIP is responsible for a network of primary experimental classes (Savoir Lire Ecrire Compter Calculer, “SLECC”). The goal of the SLECC initiative is to reconstruct school curricula on a sound basis in public education (in a situation where the average level has unfortunately become dramatically low) classes. It is open to all students, but nevertheless offers a quite high level of education to any of them – 12 classes in 2006-2007, about 75 classes in 2013-2014.

### Participation in Research Programs

I have been involved in a PROCOPE collaboration project with Bayreuth University (jointly with Michael Schneider and Thomas Peternell), spanning over the years 1990-91-92. My collaboration with Peternell continues regularly since 1988 (Schneider accidentally died in 1997). Slightly later, I became responsible for a French-Tunisian CMCU project “*Complex Analysis and Applications*” between the University of Grenoble I and the Faculty of Sciences of Monastir. This project has supported exchanges of researchers and I assumed in this context the partial direction of PhD theses of two Tunisian researchers. Over a period of fifteen years, I have also been a member of various European networks (EUROPROJ, ANACOGA, EAGER, EDGE, PROTEUS, MACK... ).

### Organization of Scientific Events

- 1989 I organized the Nice Summer School on Complex Analysis CIMPA (duration: 4 weeks).
- 1992 I founded and established the first Summer School in Grenoble. Theme: *Analytic Geometry*, duration: 2 weeks.
- 1994 I organized the sessions in Grenoble (SMF). Theme: *Hodge Theory*. This 3-day sessions resulted in the drafting of a volume published in Panoramas and Synthesis (Volume 3).
- 1995-1996 A special year “*Several Complex Variables*” was organized in MSRI Berkeley, and I was one of six members of the Scientific Committee.

- 1996-2012 I was one of the co-organizers (with Klaus Hulek and Thomas Peternell ) of the “*Komplexe Analysis*” sessions at the Oberwolfach Mathematical Institute.
- May 2000 I co-organized with Rob Lazarsfeld a summer school “*Vanishing Theorems and Effective Results in Algebraic Geometry*” for three weeks at ICTP.
- Apr. 2007 I co-organized with János Kollár in MSRI Berkeley the Conference “*Hot topics: Minimal and canonical models in Algebraic Geometry*”.

### Regular Collaborations

French-Tunisian cooperation project with the Faculty of Sciences of Monastir (Tunisia) since 1994, continuing a collaboration with Mongi Blel started in 1985; Regular collaboration with Thomas Peternell (Bayreuth University, Germany) since 1988; Collaboration with Michael Schneider (Bayreuth University, Germany) from 1988 until his accidental death in 1997; Collaboration on several occasions with Bernard Shiffman (Johns Hopkins University, Baltimore, USA) since 1992, and M. Passare, R. Lazarsfeld, J. Kollár since 1995; Collaboration on several occasions with Thomas Eckl (University of Cologne, Germany) since 2004.

### Recent Publications and Preprints (2008 to 2013)

- [19] *On the cohomology of pseudoeffective line bundles*, Lecture notes of a talk given at the Abel Symposium, July 2013, Trondheim, arXiv: math.CV/1401.5432
- [18] (in collaboration with Frédéric Campana and Misha Verbitsky) *Compact Kähler 3-manifolds without non-trivial subvarieties*, arXiv: math.AG/1304.7891
- [17] *A rigorous deductive approach to elementary Euclidean geometry*, paru dans Didácticas Específicas, Revista Electrónica - ISSN 1989-5240, Número 7 (Diciembre 2012), Artículo 5, p.68-118.
- [16] *Hans Grauert and the foundations of modern complex analysis*, to appear in the Notices of the AMS.
- [15] *Pierre Lelong: a foundational work in complex analysis and in analytic geometry*, to appear in the Notices of the AMS.
- [14] (in collaboration with Frédéric Campana and Thomas Peternell) *Rationally connected manifolds and semipositivity of the Ricci curvature*, arXiv: math.AG/1210.2092, to appear in the Proceedings of the London Math. Soc. volume in honor of Rob Lazarsfeld’s 60th birthday.
- [13] (in collaboration with Hoang Hiep Pham) *A sharp lower bound for the log canonical threshold*, arXiv: math.CV/1201.4086
- [12] (in collaboration with Slawomir Dinew, Vincent Guedj, Hoang Hiep Pham, Slawomir Kolodziej, Ahmed Zeriahi) *Hölder continuous solutions to Monge-Ampère equations*, arXiv: math.CV/1112.1138; to appear in the J. Eur. Math. Soc. 2013
- [11] (in collaboration with Christopher Hacon and Mihai Paun) *Extension theorems, Non-vanishing and the existence of good minimal models*, arXiv: math.AG/1012.0493; to appear

in Acta Mathematica 2013.

- [10] *Holomorphic Morse inequalities and the Green-Griffiths-Lang conjecture, dedicated to the memory of Eckart Viehweg*, Pure and Applied Mathematics Quarterly 7 (2011) 1165-1208.
- [9] *A converse to the Andreotti-Grauert theorem*, Annales Faculté Sciences Toulouse Math. 20 (2011), 123-135.
- [8] *On the mathematical heritage of Henri Cartan, Cartan and Complex Analytic Geometry*, Notices of the AMS 57, number 8 (Sept. 2010), 952-954.
- [7] *Holomorphic Morse inequalities and asymptotic cohomology groups: a tribute to Bernhard Riemann*, Proceedings of the Riemann International School of Mathematics “Advances in Number Theory and Geometry” held in Verbania, Italy, April 2009; Milan J. Math. 78 (2010), 265-277.
- [6] (in collaboration with Robert Berman) *Regularity of plurisubharmonic upper envelopes in big cohomology classes*, Proceedings of the Symposium “Perspectives in Analysis, Geometry and Topology” in honor of Oleg Viro (Stockholm University, May 2008), Progress in Math. 296, Birkhäuser/Springer, New York (2012) 39-66.
- [5] *Appendix to I. Cheltsov and C. Shramov’s article “Log canonical thresholds of smooth Fano threefolds”: On Tian’s invariant and log canonical thresholds*, Uspekhi Mat. Nauk (2008), no.5 (383), 73-180; translation in Russian Math. Surveys 63 (2008) 859-958.
- [4] (in collaboration with Nefton Pali) *Degenerate complex Monge-Ampère equations over compact Kähler manifolds*, Internat. J. Math. 21 (2010) 357-405.
- [3] (in collaboration with Jun-Muk Hwang and Thomas Peternell) *Compact Manifolds covered by a torus*, J. Geom. Anal 18 (2008) 324-340.
- [2] *Estimates on Monge-Ampère operators derived from a local algebra inequality*, with an appendix by Ahmed Zeriahi, arXiv:math.CV/0709.3524, Proceedings from the Kiselmanfest (Uppsala, May 2006), “Complex Analysis and Digital Geometry”, editor M. Passare, Acta Universitatis Upsaliensis, Uppsala 2009, 131-143.
- [1] (in collaboration with S. Boucksom, M. Paun and Th. Peternell) *The pseudo-effective cone of a compact Kähler manifold and varieties of negative Kodaira dimension*, arXiv:math.AG/0405285; J. Algebraic Geom. 22 (2013), 201-248.

Saint-Martin d’Hères, February 17, 2014

Jean-Pierre Demailly

