

Curriculum Vitae for Thierry Coquand

Born 18/04/1961, Jallieu (Isère, France)

Education

- 1980 École Normale Supérieure Ulm, Paris (ranked 1st)
- 1982 Agrégation de mathématique (ranked 1st)
- 1985 PhD in computer science, Paris VII

Work Experience

- 1985-89 Charge de recherche, INRIA
- 1985 Visiting scientist, Carnegie Mellon University
- 1989 Directeur de recherche, INRIA
- 1990-1991 Visiting scientist, Chalmers University of Technology
- 1991-1996 Research fellow, Chalmers University of Technology
- 1996- Professor, University of Gothenburg

Distinctions, scholarships and awards

- Wallmarska prize, 2001, from the Swedish Royal Academy of Science
- Skolem lecturer, Oslo, November 2005
- Kurt Gödel centenary research prize fellowship, category senior, 2008, a personal prize of \$ 120 000 US
- ERC Advanced Grant holder, 2010
- Member of the Council of the Association for Symbolic Logic, January 2011
- Member of the Royal Society of Arts and Sciences in Gothenburg, 2011

Expert Assignments

- International INRIA expert 2006, for the theme Symbolic Computations
- Member of the Jury junior de l'Institut Universitaire de France 2007 and 2008
- International AERES expert, december 2010
- Member of the Ackermann award Jury, 2010 and 2011

- co-organizer of a year-long special program at the Institute of Advanced Study, Princeton, devoted to the Univalent Foundations Program, together with Steve Awodey and Vladimir Voevodsky

Citations

According to Harzing, the Hirsh Index is 28 with more than 4000 citations.

Organizer and member of program committees

- Co-organizer, together with Steve Awodey and Vladimir Voevodsky, of a year-long special program at the Institute of Advanced Study Princeton, devoted to the Univalent Foundations Program 2012-2013.
- Program committee member 14th congress of logic, methodology, and philosophy, Nancy, 2011
- He was organizer of an International summer school at the Centre for Theoretical Physics, Trieste, August 2008.
- Co-organizer of three workshops in Formal Topology (1997, 2002 and 2007).
- Co-organizer a sequence of meetings on the theme “Mathematics, Algorithm and Proofs” (8 meetings between 2003 and 2010, in Dagstuhl, Luminy, Castro and Leiden) and summer schools in August, 2006, Genova and August 2008, Trieste.
- Program committee member of conferences such as POPL, LICS, TLCA, ETAPS, ...

Ph.D. Students

Main supervisor of Hugo Herbelin, Paris VII, 1995, Lena Magnusson, Chalmers, 1995, Daniel Friedlander, Chalmers, 1997, Henrik Persson, Chalmers, 1999, Pierre Hyvernat, Marseille, 2005, David Wahlsted, 2007.

External Ph.D. examiner

- External PhD examiner for A. Polansky Oslo (2011), R. Zumkeller Orsay (2008), Matthieu Sozeau Orsay (2008), Mauricio Guillermo Paris (2008), I. Rummelhoff, Oslo (2007), D. Engel, Besançon (2007), A. Mahoubi, Paris (2006), Ph. Gerhardy, Aarhus (2006), B. van der Berg, Utrecht (2006), Jens Brage, Stockholm (2006), O. Hermand, Paris VII (2005), J. Carlström, Stockholm (2005), K. Aehlig, Munich (2003), B. Gregoire Paris VII (2003), J. Chrzascz, Orsay (2003), P. Oliva, Aarhus (2003), B. Spitters (2003), F. Blanqui, Orsay, (2001), A. Miquel Paris VII (2001)

- External reviewer habilitation of A. Miquel, Paris, 2009 and G. Barthe, Sophia-Antipolis, 2004.

Invited Talks

- International Congress of Logic, Methodology and Philosophy of Science, Uppsala, 1991 and Spain, 2003
- Foundations of Soft. Tech. and Theoretical Computer Sc., Madras, 1994
- Mathematics of Program Construction, Third Int. Conference, Kloster Irsee, Germany, 1995
- Computer Science Logic 97, Aarhus, 1997
- Logic Colloquium' 98, Prague, 1998
- Heyting symposium, Amsterdam, 1998
- Domain III, Birmingham, 2002
- Calculemus, Roma, 2003
- Workshop on the philosophy of mathematics, logicism, intuitionism and formalism, Uppsala Sweden, 2004
- Typed Lambda Calculus and Applications, 2005
- Computer Algebra and Applications, EACA 2006, September, Spain
- Calculability and constructivity : historical and philosophical aspects, November 2006, Paris
- Colloque de Cerisy on Intuitionism, June 2007
- ESOP 2008, Budapest
- Logic Colloquium, July 2009
- Computer Science Logic, September 2009
- 24th meeting of the Italian Logical Society, January 2011

Journals

- Editorial board of Journal of Functional Programming
- Editorial board of Math. Structures in Computer Science
- Editor for two special issues of the Annals of Pure and Applied Logic on Formal Topology.
- Reviewer of books for Springer-Verlag (in constructive algebra) and for Princeton Univ. Press (in proof theory).

Publication list for Thierry Coquand since 2002

Journal publications

- with E. Palmgren Constructive metric completion of Boolean algebra. *Arch. Math. Logic* 41 (2002), no. 7, 687–704.
- A syntactical proof of the marriage lemma. *Theoret. Comput. Sci.* 290 (2003), no. 1, 1107–1113.

- with G.Q. Zhang. A representation of stably compact spaces, and patch topology, *Theoret. Comput. Sci.* 305, 2003, 77-84
- with M. Bezem. Newman’s lemma—a case study in proof automation and geometric logic, *Bull. Eur. Assoc. Theor. Comput. Sci. EATCS No. 79*, 2003, 86-100
- Compact spaces and distributive lattices, *J. Pure Appl. Algebra* 184, 2003, 86-100
- with G. Sambin, J. Smith, and S. Valentini. Inductively generated formal topology. *Ann. Pure Appl. Logic* 124 (2003), no. 1-3, 71–106.
- with G. Barthe Remarks on the equational theory of non-normalizing pure type systems *Journal of Functional Programming* 14 (2004), 191-210.
- Sur un théorème de Kronecker concernant les variétés algébriques *C. R. Acad. Sci. Paris, Ser. I* 338 (2004), 291-294
- with H. Lombardi and C. Quitte. Generating non Noetherian Modules constructively *Manuscripta Math.* 115 (2004), no. 4, 513–520.
- About Stone’s notion of spectrum *J. Pure Appl. Algebra*, 2005.
- A note on measures with values in partially ordered vector space. *Positivity*, 2004.
- with H. Lombardi. A short proof for the Krull dimension of a polynomial ring. *Amer. Math. Monthly* 112 (2005), no. 9, 826–829.
- with H. Lombardi and P. Schuster. A nilregular element property. *Arch. Math. (Basel)*, 85 pp. 49-54.
- with B. Spitters A constructive proof of the Peter-Weyl theorem. *MLQ Math. Log. Q.*, 51 pp. 351-359.
- with B. Spitters Formal Topology and Constructive Mathematics: the Gelfand and Stone-Yosida Representation Theorems *Journal of Universal computation* volume 11, issue 12 2005.
- Geometric Hahn-Banach. *Math. Proc. Cambridge Philos. Soc.* 2006.
- On Seminormality. *J. Algebra* 305 (2006), no. 1, 577–584.
- with H. Lombardi A logical approach to abstract algebra. *Math. Structures Comput. Sci.* 16 (2006), no. 5, 885–900.

- with A. Spiwack Strong Normalisation with Domain Theory, to appear in Logical Methods in Computer Science, selected issue from LICS 2006.
- with H. Lombardi and P. Schuster. The projective spectrum as a distributive lattice. Cahiers de Topologie et Géométrie différentielles catégoriques. (2007)
- The completeness of typing for context-semantics. Fundamenta Informatica (2007), selected issue from TLCA 2005.
- with A. Spiwack. A proof of strong normalisation using domain theory. Logical Method in Computer Science 3 (4) 2007
- A Space of Valuations. Ann. Pure Appl. Logic 157 (2009), no. 2-3, 97–109.
- with B. Spitters. Constructive Gelfand duality for C^* algebras. Math. Proc. Cambridge Philos. Soc. 147 (2009), no. 2, 339–344.
- with B. Spitters. Integrals and valuations. J. Log. Anal. 1 (2009), Paper 3, 22 pp.
- with L. Ducos, H. Lombardi, C. Quitté. Constructive Krull dimension. I. Integral extensions. J. Algebra Appl. 8 (2009), no. 1, 129–138.
- with H. Lombardi and P. Schuster. Spectral schemes as ringed lattices. Ann. Math. Artif. Intell., 2009.
- with G. Jaber. A note on forcing and type theory. Fundamenta Informatica, 2010.
- with H. Lombardi and C. Quitté. Curves and coherent Prüfer rings. Journal of Symbolic Computations, December 2010.
- with B. Spitters, Constructive Theory of Banach algebras, Journal of Logic and Analysis, to appear.
- with E. Palmgren and B. Spitters, Metric complement of overt closed sets. Mathematical Logic Quarterly, to appear.

From refereed conferences

- with R. Pollack and M. Takayama A Logical Framework with Dependently Typed Records. Typed Lambda Calculus and Applications'03
- with H. Lombardi. Hidden constructions in abstract algebra (3) Krull dimension of distributive lattices and commutative rings. in: Commutative ring theory and applications. Eds: Fontana M., Kabbaj

S.-E., Wiegand S. Lecture notes in pure and applied mathematics vol 131. (2002) pp. 477–499.

- with A. Bove. Formalising Bitonic Sort in Type Theory. Types for Proofs and Programs TYPES 2004, LNCS 3839 pp. 83–98.
- with H. Lombardi A Logical Approach to Abstract Algebra. CiE2005, pp. 86–95.
- with M. Bezem. Automating Coherent Logic. LPAR 2005, pp. 246–260.
- with A. Abel and U. Norell. Connecting a Logical Framework to a First-Order Logic Prover. FroCos 2005, pp. 285–301.
- with A. Abel. Untyped Algorithmic Equality for Martin-Lf’s Logical Framework with Surjective Pairs. TLCA 2005, pp. 23–38
- with A. Spiwack. Strong Normalisation with Domain Theory. LICS 2006.
- with A. Spiwack Towards constructive homological algebra in Type Theory. Calculemus 2007.
- with A. Abel and P. Dybjer Dependent Types with Universes via Normalization-by-Evaluation LICS 2007.
- with A. Abel and M. Pagano. Type-checking dependent types TLCA 2009.

From invited presentation

- A completeness theorem for geometrical logic Invited Talk, *Logic, Philosophy and Methodology of Science, 2003.*, to appear, 2004
- Completeness Theorems and lambda-Calculus. Invited talk, TLCA 2005, pp. 1-9

In books

- *La contribution de Kolmogorov en logique intuitionniste.* (sous la direction de Éric Charpentier et Nikolai Nikolski), collection Échelles, 2005. Has been translated for an English edition 2007.
- with H. Lombardi and M.F. Roy *An elementary characterization of Krull dimension.* in From Sets and Types to Topology and Analysis. Towards Practicable Foundations for Constructive Mathematics. (L. Crosilla, P. Schuster, eds.). Oxford University Press, pp. 239–244.

Others

- Entry on *Type Theory* in the Stanford Encyclopedia of Philosophy see
- T. Coquand, P. Dybjer, E. Palmgren. Type-theoretic Foundations of Constructive Mathematics. Draft (171 pages) conditionally accepted for publication by *Cambridge University Press*.

Most cited papers

- with G.Huet The calculus of constructions. *Information and Computation*, 1988.
- with Ch. Paulin-Mohring Inductively defined types. LNCS 417, COLOG-88.
- Constructions: A higher order proof system for mechanizing mathematics, LNCS, Proceeding of Eurocal 1985.
- Pattern-Matching with dependent types. Proceedings of the Workshop on Types for Proofs and Programs, 1992.
- An analysis of Girard's paradox, LICS 1986.
- Metamathematical investigations of a calculus of constructions. In P. Odifreddi, editor, *Logic and Computer Science*. Academic Press, 1990.
- A semantics of evidence for classical logic. *Journal of Symbolic Logic*, 1995.

Most important papers

- An analysis of Girard's paradox, LICS 1986.
- with A. Spiwack. A proof of strong normalisation using domain theory. *Logical Method in Computer Science* 3 (4) 2007
- Sur un théorème de Kronecker concernant les variétés algébriques *C. R. Acad. Sci. Paris, Ser. I* 338 (2004),291-294
- with H. Lombardi and C. Quitte. Generating non Noetherian Modules constructively *Manuscripta Math.* 115 (2004), no. 4, 513–520.