

# Curriculum Vitae

Alain VALETTE

19 March 2024

## 1 Curriculum Vitae

### 1.1 Personal data

Name: Alain Joseph Jean VALETTE

Place and date of birth: 24 december 1958, Berchem-Sainte-Agathe (Belgium)

Civil status: Married, 3 children (1988, 1990, 1992)

Citizenship: Belgian (Permit C in Switzerland)

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Languages (in decreasing order of proficiency)

- French
- English
- Italian
- Dutch
- German.

### 1.2 Education

1980: Master in Mathematics, Univ. Libre de Bruxelles, Belgium.

1983: PhD in Sciences, Univ. Libre de Bruxelles, Belgium. Title: *K-théorie pour certaines  $C^*$ -algèbres associées aux groupes de Lie*; co-supervised by L. Waelbroeck (Brussels) and A. Connes (Paris).

### 1.3 Employment history

1980-1984: Research assistant, Belgian National Fund for Scientific Research;

1984-1986: Civil service as conscientious objector (Belgium)

1986-1988: Senior Research assistant, Belgian National Fund for Scientific Research;

1986-1988: “Maître d’Enseignement”, ULB;

1988-2024: Full Professor at the Université de Neuchâtel. Emeritus since 1st February 2024.

## 1.4 Visiting professorships

Nice (April-May 1988); Metz (Nov. 1993 and Feb. 2004); Brussels (Feb. 1996); Strasbourg (Nov. 1996); Sydney (Feb. 1997); ETH Zürich (April-June 1999); Paris-Sud (Nov-Dec. 1999); Lille (Sept. 2006); Orléans (Oct.-Dec. 2008); KU Leuven (Feb. 2011); Institut Henri Poincaré (Paris, Jan. and June 2011), UC Louvain-la-Neuve (Jan. 2013), MSRI Berkeley (Sept.-Dec. 2016).

## 1.5 Visiting stays

- Institut des Hautes Etudes Scientifiques (Bures-sur-Yvette, France), September 1981-June 1982;
- University of Maryland (College Park, USA), April 1983;
- Mathematical Sciences Research Institute (Berkeley, USA), August 1984;
- University of Warwick (Great Britain), March-April 1987;
- University of Geneva, May 1987;
- Centre for Mathematical Analysis (Canberra, Australia), August 1987;
- Institut des Hautes Etudes Scientifiques (Bures-sur-Yvette, France), November-December 1999;
- Newton Institute (Cambridge, UK), January 2000;
- Institut des Hautes Etudes Scientifiques (Bures-sur-Yvette, France), September 2008.
- Mittag-Leffler Institute (Stockholm), Jan. 2012.

## 1.6 Awards and fellowships

- Prix Sterpenich du Dép. de Maths, ULB, july 1978;
- Prix F. Mercier de la Faculté des Sciences, ULB, july 1978;
- Lauréat, Concours des Bourses de Voyage de l'Etat belge, oct. 1981;
- Lauréat, Concours annuel (groupe I), Science class of Belgian Royal Acad., december 1987.
- Francqui Chair, Francqui Foundation (Belgium), 2011.
- Simons Research Professor at MSRI (Berkeley), September-December 2016.

## 1.7 Research grants

- 20 successful grants at the Swiss SNF, for a total amount of 7'556'000 CHF. Full list on: <https://data.snf.ch/grants/person/23421>; 31 post-doctoral collaborators supervised.
- Member of European Network TMR "Geometric Analysis" (2000-2004; 114'000 euros).
- Project leader, Bernoulli International Center special semester on Limits of graphs in group theory and computer science, EPFL (January-June 2007; 180'000 CHF).
- Project leader, SNF Sinergia project CRSI22-125454 *Sofic groups* in collaboration with EPFL and University of Vienna (2010-2013; 841'000 CHF)

## 1.8 Graduate students

21 PhD theses successfully completed.

Full list on: <https://www.genealogy.math.ndsu.nodak.edu/id.php?id=58713>

## 1.9 Advanced courses (doctoral level)

- Representations of compact Lie groups (Brussels, 1986-87).
- Kazhdans property (T) for locally compact groups (with P. de la Harpe; Berne, May 1987).
- Algebraic K-theory and cyclic cohomology (Nice, May 1988).
- Ergodic theory (Lausanne, winter semester 1988-89).
- Harmonic analysis on graphs (with P. de la Harpe; Lausanne, winter semester 1990-91).
- Old and new about Kazhdans property (T) (European school of group theory, Trento, August 1993).
- $L^2$  cohomology and Kähler manifolds (with M. Burger, P. de la Harpe and M. Troyanov; Lausanne, winter semester 1994-95).
- Introduction to  $L^2$ -cohomology (Brussels, cours de DEA, February 1996).
- Introduction to the Baum-Connes conjecture (Strasbourg, November 1996).
- Introduction to the Baum-Connes conjecture (with P. Julg; Lausanne, January-February 1998).
- Introduction to the Baum-Connes conjecture (Nachdiplom-vorlesungen, ETH Zürich, April-June 1999).
- Ramanujan graphs (UBS, June 1999).
- Ramanujan graphs (Orsay, November-December 1999).
- Expanding graphs (Lausanne, winter semester 2000-2001).
- The Baum-Connes assembly maps for discrete groups (Barcelona, September 2001).
- $C^*$ -algebras and expanding graphs (Park City (Utah), July 2002).
- Introduction to  $L^2$ -cohomology (Paris, July 2003).
- Ergodic theory (Neuchatel, winter semester 2003-04).
- Amenability and semi-simple Lie groups (Venice, June 2004).
- Property (T) (Ottawa, August 2004).
- Introduction to the Baum-Connes conjecture (Neuchatel, Doctoral school, September 2005).
- Affine actions (Lille, September 2006).
- Ramanujan graphs (EPFL, January-February 2007).
- Amenability and affine actions (ESI Vienna, March 2007).
- Actions affines (Lausanne, October-December 2007).
- Actions affines et géométrie des groupes (Toulouse, January 2008).
- Actions affines isométriques sur des espaces de Banach (Orléans, Oct-Dec. 2008).
- Novikov conjecture for uniformly embeddable groups (Orsay, Nov. 2010).
- Yus property (A) (Institut Henri Poincaré, Jan. 2011).
- Metric embeddings in Hilbert and Banach spaces (Leuven, March 2011).
- $L^2$ -Betti numbers (Institut Henri Poincaré, June 2011).
- Metric embeddings in Hilbert and Banach spaces (EPFL, Fall 2011).

## **1.10 Memberships: American, Belgian, European and Swiss Math. Societies**

## **1.11 Editorial tasks**

### **1.11.1 Editorial boards**

Journal of Lie Theory (since 1990); Bulletin of Belgian Math. Soc. (since 1994); Expositiones Mathematicae (since 2005); Annales Fourier (2006-2018); Compositio Math. (2010-2017), SMF series “Cours spécialisés” (2017-2023).

### **1.11.2 Book edition**

1. (with G. Arzhantseva) Limits of graphs in group theory and computer science, EPFL Press, 2009.
2. (with K. Dekimpe, P. Igodt) Discrete groups and geometric structures, Contemporary Math. 501, AMS, 2009.
3. Finite-dimensional approximation of discrete groups. Abstracts from the workshop held May 15-21, 2011. Organized by G. Arzhantseva, A. Thom and A. Valette, Oberwolfach Reports. Vol. 8, no. 2. Oberwolfach Rep. 8 (2011), no. 2, 1429-1467.

## **1.12 Responsibilities**

### **1.12.1 Panels:**

- Member of the Board of the “Société Belge des Professeurs de Mathématiques d’expression française” (1984-1988).
- Scientific Committee, Swiss Doctoral Program in Mathematics (1990-2016).
- Member of the CUSO Committee for Mathematics (1994-1995).
- Member of Scientific Committee, ICM Zürich (1994).
- Research Committee of Université de Neuchâtel (1996-2000).
- Representative of SCNAT (Swiss Academy of natural sciences) to the board of IHES (since 2000).
- Member of Scientific board, Centre Interfacultaire Bernoulli, EPFL (since 2002).
- Deputy member representing U. Neuchâtel at the SNF Foundation Council (2009-2016).
- AERES evaluation committee for mathematics in Toulouse (January 2010).
- AERES evaluation committee for mathematics in Marseille (January 2011).
- AERES evaluation committee for mathematics in Metz and Nancy (January 2012).
- Scientific Committee for Mathematics, FWO-Flanders (2010-2016).
- Evaluation panel for assistant-professors of Swiss SNF (2013-2021).
- Evaluation panel, Karlsruhe-Heidelberg doctoral school in mathematics, 2016.

### **1.12.2 Administrative responsibilities**

- Head of Scientific Committee, Swiss Doctoral Program in Mathematics (1995-2002).
- Head of the Mathematics Institute, U. Neuchâtel (2000-2024).
- Head of the Research Committee, Université de Neuchâtel (2004-2008)

- Vice-Dean of the Faculty of Sciences, Université de Neuchâtel (2008-2012)
- President of the Senate (=assembly of professors), U. Neuchâtel (2012-2016).
- Head of the Mathematics Institute, U. Neuchâtel (2017-2021).
- Secretary/treasurer of the Swiss Mathematical Society(SMS) (2018-2019).
- Vice-President of the Swiss Mathematical Society (2020-2021).
- President of the Swiss Mathematical Society (2022-2023).
- Head of the Committee for the SCNAT Schlöfli Prize in Mathematics (Dec. 2023-March 2024).

### 1.12.3 Assemblies

- Representative of SMS at the IMU General Assembly, Gyeongju (South Korea, 2014).
- Representative of SMS at the EMS-meeting of Presidents, TU-Berlin (March 2019); online in subsequent years.
- Representative of SMS at the IMU General Assembly, Helsinki (2022).

### 1.13 Organization of international conferences and workshops

- Winter school Boundaries of groups, Champoussin, March 1992 (organized with P. de la Harpe).
- Borel seminar Non-commutative differential geometry, Bern, May 1992.
- Journées de la Société Mathématique Suisse, Lattices in semi-simple Lie groups, Neuchâtel, May 1993.
- Winter school Growth and isoperimetric inequalities, Champoussin, March 1994.
- Winter school Group cohomology, Château-d'Oex, March 1995 (organized with P. de la Harpe, J-C. Hausmann and M. Kervaire).
- Winter school The zero in the spectrum conjecture, Les Diablerets, March 1996.
- Winter school Baum-Connes conjecture, Les Diablerets, March 1998.
- Borel seminar Wavelets , Bern, April-June 1998 (organized with H-M. Reimann).
- Workshop on the Baum-Connes conjecture, ETH Zurich, 4-7 May 1999.
- Borel seminar Groups and languages, Neuchâtel, 25-27 June 2000 (organized with P. de la Harpe).
- Borel seminar 2001: an MM-space odyssey, Bern, April-June 2001 (organized with P. de la Harpe and M. Troyanov).
- Journées de la Société Mathématique Suisse, Riemann's  $\zeta$ -function, Neuchâtel, 7-9 June 2001.
- Mini-workshop Geometrization of Kazhdan's property (T), Oberwolfach (Germany), 7-13 July 2001 (organized with B. Bekka and P. de la Harpe).
- Borel seminar Cost and  $L^2$ -cohomology, Bern, April-June 2002.
- Journées Maths + stats du 3ème cycle Romand, Random groups and percolation, Neuchâtel, 11-13 December 2002.
- Winter school Quasi-isometry invariants, Les Diablerets, March 2004 (organized with G. Arzhantseva and D. Gaboriau).
- Conference on the occasion of Pierre de la Harpe's 60th birthday, Geneva, October 2004 (organized with T. Smirnova-Nagnibeda and C. Pache).
- Session Harmonic analysis of the Joint Meeting of the BENELUX and French Mathematical Societies, Ghent (Belgium), 20-22 May 2005 (organised with B.

Bekka and C. Molitor-Braun).

Journées Les Maths de Michel (to the memory of Michel Matthey), Neuchâtel, 25-26 September 2006 (organised with P. Balmer et J. Thevenaz).

-International congress Geometric linearization of graphs and groups, EPFL, 22-26 January 2007 (organized with G. Arzhantseva).

-Discrete groups and geometric structures with applications III, Kortrijk (Belgium), 26-30 May 2008 (scientific committee + edition of Proceedings).

-Analysis and geometry on groups, Neuchâtel, June 11-13, 2008.

-Affine Isometric Actions of Discrete Groups, Ascona (Switzerland), June 28 - July 3, 2009 (organized with G. Arzhantseva).

-Finite-dimensional approximations of groups and algebras, Oberwolfach (Germany), 16-20 May, 2011 (organized with G. Arzhantseva and A. Thom).

-Metric embeddings and group theory, MSRI (Berkeley, USA), Oct. 17-21, 2011 (co-organized with B. Johnson, A. Naor, G. Schechtman).

-CAT (0) Spaces and Groups, Les Diablerets (Switzerland), March 25-30, 2012 (organized with N. Monod).

-Workshop on Connes' Embedding Conjecture, Neuchâtel, April 23-27, 2012 (organized with V. Capraro).

- *Besançon-Neuchâtel Functional Analysis days*: 3 days every year, co-organized with G. Lancien (Besançon) from 2010 to 2023.

- *Expanders everywhere*, Neuchâtel Dec. 1-5, 2014, co-organized with A. Khukhro.

- *Groups, graphs, action!*, Neuchâtel 19-21 October 2015, co-organized with A. Khukhro and L. Ciobanu.

- *Spring meeting of the Swiss Math Soc*, Neuchâtel 12-14 June 2019, co-organized with A. Kolpakov.

-Kervaire seminar "*Baum-Connes conjecture*", co-organized with M.-P. Gomez-Aparicio and P. Julg, 24-29 October 2021, Les Diablerets, Switzerland.

- "*Climathics*" (Mathematics of climate change), co-organised with I. Chatterji, J. Fernandez, A. Garin, L. Grave de Peralta, Les Diablerets, Dec. 2022.

- Co-organizer of *Algebras, Geometries, and Groups*, A conference in memory of Jacques Tits (1930 - 2021), Brussels, 20-21 December 2022 .

- Co-organizer of *Colloque pour honorer la mémoire de Jacques Tits*, Collège de France, Paris, 11-13 Dec. 2023.

## 1.14 Outreach

-From 1980 to 1988: member of the training team of the Belgian team at IMO.

-From 1993 to 2003: coaching (vice-coach) of the Swiss team at International Mathematical Olympiads.

-Participation to the Week Science et Cité, Neuchâtel, 6-13 May 2001.

-Two presentations in the Nuit de la Science, Geneva, July 2001 and July 2002.

-Organization of Mathematics Exhibitions (Uni. Neuchâtel, May 2001, March 2005, May 2010; Lycée Denis-de-Rougemont, Neuchâtel, 8 March 2008).

-Large audience lecture "The Da Vinci Code viewed by a mathematician", Neuchâtel, 17 March 2005; Université Populaire Jurassienne, Moutier, November 10, 2005; Delémont, November 25, 2006.

-Soft skills lecture: "How I will referee your first paper", Swiss doctoral Program, Geneva, 11 February 2010.

- "L'imagination en Mathématiques", Cité des Sciences (La Villette, Paris), 10 and 16 Dec. 2010.

-Various presentations on mathematical subjects in Belgian, French and Swiss high schools.

## 2 References

The following persons agreed to provide references on my work and capabilities:

- Prof. Emmanuel KOWALSKI, ETH Zürich, Switzerland, `kowalski@math.ethz.ch`
- Prof. Georges SKANDALIS, U. Paris Rive Gauche, `skandalis@imj-prg.fr`
- Prof. Betül TANBAY, Bogaziçi University, Istanbul, Turkey, `tanbay@bogazici.edu.tr`
- Prof. Stefaan VAES, KU Leuven, Belgium, `stefaan.vaes@kuleuven.be`