

# CV of Jaume Agudé

UPDATED JULY 8, 2016

## 1 Personal Facts

- Full name: **Jaume Agudé Bover**.
- Passport/id-card number:
- Born December 19, 1953 in Barcelona (Spain).
- Citizenship: Spanish
- Status:
- Permanent address:
- Private Phone number:
- Professional Phone number: (34) 935 811 867. Fax: (34) 935 812 790.
- e-mail address: [aguade@mat.uab.cat](mailto:aguade@mat.uab.cat)
- Personal internet page: <http://mat.uab.cat/~aguade>
- Languages: Catalan, Spanish, French, German and English.

## 2 Academic degrees

- Degree in Mathematics at the Universitat Autònoma de Barcelona (1976).
- PhD in Mathematics at the Universitat Autònoma de Barcelona (1979). Thesis advisor: Manuel Castellet.

## 3 Academic positions

- Assistantship at the Universitat Autònoma de Barcelona (1976–1979).
- Postdoctoral position at the ETH Zurich (1979–1981).
- Associated professor at the Universitat Autònoma de Barcelona (1982–1983).
- Professor at the Universitat de València (1983).
- Professor at the Universitat Autònoma de Barcelona (since November, 1983).

## 4 Other relevant positions and awards

- Head of the Department of Mathematics of the UAB (<http://www.mat.uab.cat>) from June 2004 to August 2007.
- Trustee of the *Ferran Sunyer i Balaguer Foundation* (Chair of the Foundation from 2000 to 2002). <http://ffsb.iec.cat>.
- Director of the *Barcelona Algebraic Topology Research Group*, partially supported by the Research Department of the Catalan Government. Information on this research group can be obtained at the page <http://mat.uab.cat/~topalg>.
- Organizer (together with R. Serra) of the international mathematical competition *Maths Quiz 2000*.
- Organizer of several scientific meetings and seminars:
  - The *Barcelona Conference on Algebraic Topology*, an international conference held in Barcelona every fourth year from 1982 to 2002.
  - The first *Spanish Topology Meeting* in 1993 which is now held every year in some place of Spain.
  - The seminar *The mathematical basis of technological civilization*, held in Sabadell in 1999.
  - *The Barcelona Topology Workshop* in 1996 (now held every year).
- Director of the “Marie Curie Training Site” *Cohomological and group theoretical methods in Topology*, granted by the EU under HPMT-CT-2000-00075.
- Member of the scientific advisory committee of the *Centre de Recerca Matemàtica* (CRM) in Barcelona.
- Chief Editor of the journal *Butl. Soc. Catalana Mat.* from 1996 to 2000.
- Member of the committee of the *Catalan Mathematical Society* from 1996 to 2000.
- Member of the scientific committee of the journal *Rev. Mat. Complut.* from 1988 to 1992.
- Chief Editor of the journal *Publ. Sec. Mat. Univ. Autònoma Barcelona* from 1982 to 1986.
- 1980 Ferran Sunyer Balaguer Prize for Mathematical Research (awarded by the Institut d'Estudis Catalans).

## 5 Research grants and research projects

- *Duality in CW-complexes and relations to G-structures*. Granted from 1982 to 1985 by CAICYT.
- *Topology of loop spaces and deformation theory*. Granted from 1986 to 1989 by CICYT.
- *Finite loop spaces*. Granted from 1990 to 1991 by DGICYT.
- *Groups and classifying spaces* (PB91-0467). Granted from 1992 to 1995 by DGICYT.
- *Elliptic cohomology* (CE-ERBCHRXCT-940441). Granted from 1994 to 1996 by the EU.
- *Homotopy theory and applications* (CE-ERBCHRXCT-940560). Granted from 1994 to 1997 by EU.
- *Cohomological methods in unstable homotopy* (PB94-0725). Granted from 1995 to 1998 by DGICYT.
- *Homotopy theory, low dimensional topology and cohomology of groups* (96-0712). Granted from 1997 to 1999 by INTAS.
- *Homotopy theory of Lie groups* (PB97-0203). Granted from 1998 to 2001 by DGES.
- *Modern homotopy theory* (EEC-HPRN-CT-1999-00119). Granted from 2000 to 2003 by the EU.
- *Homotopy theory of finite groups, Lie groups and Kac-Moody groups* (BFM2001-2035). Granted from 2001 to 2004 by MCYT.
- *Grup de Topologia Algebraica de Barcelona (GTAB) 2005SGR-00606*. Granted from 2005 to 2008.
- *Structure of classifying spaces of groups and group actions* (MTM2004-06686). Granted from 2004 to 2007 by MEC.
- *Multiplicative structures in topology and homotopy theory* (MTM2007-61545). Granted from 2007 to 2010 by MEC.
- *Grup de Topologia Algebraica de Barcelona (GTAB) 2009SGR-1092*. Granted from 2009 to 2013.
- *Análisis local en grupos y espacios topológicos* (MTM2010-20692). Granted from 2010 to 2013.

## 6 Main research publications

- *Generalized invariants of reflection groups in rank two*. arXiv:1906.09096.
- *Cohomology of Kac-Moody groups over a finite field* (with A. Ruiz). *Algebr. Geom. Topol.* 13 (2013), no. 4, 2207–2238.
- *The torsion index of a  $p$ -compact group*. *Proc. Amer. Math. Soc.* 138 (2010), no. 11, 4129–4136.

- *p*-compact groups as subgroups of maximal rank of Kac-Moody groups. *J. Math. Kyoto Univ.* 49 (2009), no. 1, 83–112.
- *On cohomology algebras*, in “Guido’s book of conjectures”, *Monogr. de L’Enseign. Math.* No. 40, 2008, 5–6.
- *Four lines in space*. *J. Geom.* 92 (2009), no. 1–2, 1–16.
- *The arboreal approach to pairs of involutions*. *Comm. Algebra* 37 (2009), no. 3, 1104–1116.
- *Rank Two Integral Representations of the Infinite Dihedral group* (with C. Broto and L. Saumell). *Comm. Algebra* 35 (2007), 1539–1551.
- *Cohomology of classifying spaces of central quotients of rank two Kac-Moody groups* (with C. Broto, N. Kitchloo and L. Saumell). *J. Math. Kyoto Univ.* 45 (2005), no. 3, 449–488.
- *T and the cohomology of mapping spaces* (with C. Broto and L. Saumell). In *Categorical decomposition techniques in algebraic topology*, 1–20, *Progr. Math.*, 215, Birkhäuser, Basel, 2004.
- *Maps between classifying spaces of Kac-Moody groups* (with A. Ruiz). *Adv. Math.* 178 (2003), 66–98.
- *A mod two analogue of a conjecture of Cooke* (with C. Broto and D. Notbohm). *J. London Math. Soc.* (2) 55 (1997), no. 1, 23–36.
- *Fake 3-connected coverings of Lie groups* (with C. Broto and M. Santos). *Duke Math. J.* 80 (1995), no. 1, 91–103.
- *Homotopy classification of spaces with interesting cohomology and a conjecture of Cooke. I* (with C. Broto and D. Notbohm). *Topology* 33 (1994), no. 3, 455–492.
- *Constructing modular classifying spaces*. *Israel J. Math.* 66 (1989), no. 1-3, 23–40.
- *Computing Lannes T functor*. *Israel J. Math.* 65 (1989), no. 3, 303–310.
- *Decomposable free loop spaces*. *Canad. J. Math.* 39 (1987), no. 4, 938–955.
- *On the mod p torus theorem of John Hubbuck* (with L. Smith). *Math. Z.* 191 (1986), no. 2, 325–326.
- *Invariants of modular representations and polynomial algebras over the Steenrod algebra*. *Duke Math. J.* 52 (1985), no. 2, 315–327.
- *Modular cohomology algebras* (with L. Smith). *Amer. J. Math.* 107 (1985), no. 3, 507–530.
- *Algebraic and geometric models for  $H_0$ -spaces* (with A. Zabrodsky). *Trans. Amer. Math. Soc.* 273 (1982), no. 1, 181–190.

- *Cohomology of binary systems*. Arch. Math. (Basel) **36** (1981), no. 5, 434–444.
- *A note on realizing polynomial algebras*. Israel J. Math. **38** (1981), no. 1-2, 95–99.
- *Cohomology algebras with two generators*. Math. Z. **177** (1981), no. 2, 289–296.
- *The cohomology of the  $GL_2$  of a finite field*. Arch. Math. (Basel) **34** (1980), no. 6, 509–516.
- *Fiberings of spheres by spheres mod  $p$* . Quart. J. Math. Oxford Ser. (2) **31** (1980), no. 122, 129–137.
- *How to recognize a localized sphere*. Proc. Amer. Math. Soc. **78** (1980), no. 4, 601–604.
- *The homology of  $\Omega(X \vee Y)$*  (with M. Castellet). Collect. Math. **29** (1978), no. 1, 3–6.

## 7 Other publications

- I have edited the proceedings of the 1982, 1986, 1990 and 1998 *Barcelona Conference on Algebraic Topology*:
  - *Cohomological Methods in Homotopy Theory* (ed. with C. Broto and C. Casacuberta). Progress in Mathematics 196. Birkhäuser, 2001.
  - *Algebraic Topology. Homotopy and Group Cohomology* (ed. with M. Castellet and F.R. Cohen). Lecture Notes in Math., 1509, Springer, Berlin, 1992.
  - *Algebraic topology, Barcelona 1986* (ed. with R. Kane) Lecture Notes in Math., 1298, Springer, Berlin, 1987.
  - *Workshop on Algebraic Topology. Proceedings* (ed. with M. Castellet) Publ. Sec. Mat. Univ. Autònoma Barcelona No. 26, 1982.
- I have published several articles about mathematics in the science section of *La Vanguardia* (one of the major Spanish newspapers):
  - *Cyclic labyrinths: the solution to the Burnside problem* (in Spanish). La Vanguardia, October 8, 1994.
  - *The Rio declaration and the world mathematical year* (in Spanish). La Vanguardia, January 30, 1993.
  - *The Chinese wall and the future of algebra* (in Spanish). La Vanguardia, June 13, 1992.
  - *One hundred years of  $E_8$*  (in Spanish). La Vanguardia, June 8, 1991.
  - *The transformations of the infinite-dimensional space* (in Spanish). La Vanguardia, November 17, 1990.
- Here are some papers on mathematics vulgarization:

- *MQ2000: The story of a challenge* (in Catalan) (with R. Serra). Butl. Soc. Catalana Mat. 16 (2001), no. 1, 7–42.
- *Even more extraordinary adventures of the smallest group of all.* (in Catalan). Butl. Soc. Catalana Mat. 15 (2000), no. 2, 7–16.
- *One hundred years of  $E_8$*  (in Catalan). Butl. Soc. Catalana Mat. No. 7, (1992), 61–69.
- *The mathematical foundations of technological civilization* (ed.) (in Catalan). ISBN: 84-95116-10-0. Fundació Caixa de Sabadell, 1999.
- *Mirrors, kaleidoscopes and polyhedra* (in Catalan). Butl. Sec. Mat. Soc. Catalana Ciènc. Fís. Quím. Mat. No. 15 (1983), 12–42.
- *How is algebraic topology algebraic?* (in Catalan) Publ. Sec. Mat. Univ. Autònoma Barcelona No. 23 (1981), 81–98.
- Here are some other miscellaneous publications:
  - *Realizability of localized groups and spaces.* Publ. Sec. Mat. Univ. Autònoma Barcelona No. 23, (1981), 69–79.
  - *Realizability of cohomology algebras: a survey.* Publ. Sec. Mat. Univ. Autònoma Barcelona **26** (1982), no. 2, 25–68.
  - *On the space of free loops of an odd sphere.* Publ. Sec. Mat. Univ. Autònoma Barcelona No. 25, (1981), 87–90.
  - *Fibrations of spheres by spheres modulo  $p$*  (in Catalan). Publ. Sec. Mat. Univ. Autònoma Barcelona No. 16, (1979), 3–66.
  - *The realizability of certain algebras as cohomology rings.* Proceedings of the sixth conference of Portuguese and Spanish mathematicians, Part I (Santander, 1979) Rev. Univ. Santander No. 2, part 1, (1979), 463–464.
  - *A generalization of the mod  $C$  Hurewicz theorem.* Proceedings of the sixth conference of Portuguese and Spanish mathematicians, Part I (Santander, 1979). Rev. Univ. Santander No. 2, part 1, (1979), 459–461.
- Furthermore, I have about fifty reviews of mathematical papers in *Math. Rev.*

## 8 PhD Thesis

I have been the advisor for the following PhD thesis:

- A. RUIZ, *Maps between classifying spaces of rank two Kac-Moody groups*, 2001.
- M. SANTOS, *Homotopical properties of  $DI(4)$* , 1997.
- L. SAUMELL, *On decomposable free loop spaces and homotopy commutative finite loop spaces*, 1989.
- C. BROTO, *Linear characters and spherical fibrations*, 1988.

## 9 Research stays abroad

Besides many short visits to participate in conferences or seminars, or to deliver lectures or talks, I have been invited to visit several foreign universities and institutes:

- Kyoto University, one month in 2012.
- Pacific Institute for the Mathematical Sciences (UBC, Vancouver), one month in 2012.
- Kyoto University, one month in 2008.
- Pacific Institute for the Mathematical Sciences (UBC, Vancouver), four months in 2007.
- Forschungsinstitut für Mathematik (Zürich), one month in 2003.
- University of Wisconsin-Madison, six months in 2002.
- University of Aberdeen, one month in 2000.
- The Fields Institute (Toronto), one month in 1996.
- Université de Lausanne, six weeks in 1995.
- Sonderforschungsbereich 170 (Göttingen), one month in 1993.
- Sonderforschungsbereich 170 (Göttingen), one month in 1991.
- Sonderforschungsbereich 170 (Göttingen), five months in 1989.
- Ohio State University, four months in 1987.
- Forschungsinstitut für Mathematik (ETH Zurich), six weeks in 1985.
- Mathematisches Institut der Universität Göttingen, one month in 1983.
- Mathematisches Institut der Universität Göttingen, one month in 1982.
- Forschungsinstitut für Mathematik (ETH Zürich), two years as a post-doc from 1979 to 1981.

## 10 Teaching experience

For thirty-five years, I have been teaching mathematics at both the undergraduate and graduate level at the Universitat Autònoma de Barcelona, not only at the Faculty of Science but also at the School of Engineering, the Faculty of Philosophy and the Faculty of Social Science. The range of subjects is very broad, from elementary calculus or statistics, to algebraic topology, homotopy theory, classic geometry, quadratic forms, etc.

During my stays at the Ohio State University in Columbus, the University of Wisconsin Madison and the University of British Columbia, I taught a total of five semester courses.

## 11 Personal interests

Visit [jaumeaguade.cat](http://jaumeaguade.cat) to learn about them.