

# CURRICULUM VITAE

CONSTANTIN-COSMIN TODEA

## CURRENT POSTION/CONTACT INFORMATION

Associate Professor  
Department of Mathematics  
Technical University of Cluj-Napoca  
Str. G. Baritiu 25, room 198  
400027 Cluj-Napoca, Romania  
Tel: +4 026440 1261

[constantin.todea@math.utcluj.ro](mailto:constantin.todea@math.utcluj.ro)  
<http://users.utcluj.ro/~todeacos/>

## EMPLOYMENTS

- **Technical University of Cluj-Napoca, Cluj-Napoca, Romania**  
Associate Professor, October 2019 – Present
- **Simion Stoilow Institute of Mathematics of the Romanian Academy (IMAR), Bucharest, Romania**, Postdoctoral Researcher, February 2019- September 2020
- **Technical University of Cluj-Napoca, Cluj-Napoca, Romania**  
Assistant Professor, February 2015- September 2019
- **Technical University of Cluj-Napoca, Cluj-Napoca, Romania**  
Teaching Assistant, February 2009- January 2015
- **National College “Avram Iancu” of Cîmpeni, Alba region, Romania**  
Teacher of Mathematics, September 2005-January 2009

## EDUCATION

- **Babes-Bolyai University, Cluj-Napoca, Romania**  
Ph.D. in Mathematics, October 2004- September 2010  
Thesis: *Cohomology of groups and of blocks of group algebras* (Adviser: Andrei Marcus)
- **Babes-Bolyai University, Cluj-Napoca, Romania**  
M.S. in Mathematics ( “Algebra and Geometry” -in English), October 2003 - July 2004  
B.S. in Mathematics, October 1999 - July 2003.

## RESEARCH INTERESTS

- Modular representations of finite groups
- Hochschild cohomology, group cohomology and related homological algebra

## PUBLISHED PAPERS

- 1) *Fusions and Clifford extensions*, **J. Group Theory** **22** (2019), 169-190 (joint work with. T. Coconet and A. Marcus).
- 2) *On some saturated triples and hyperfocal subgroups*, **J. Algebra** **499** (2018), 358-374.
- 3) *Bockstein homomorphisms for Hochschild cohomology of group algebras and of blocks of finite groups*, **Forum Mathematicum** **29** (3) (May 2017), 717-735.
- 4) *Frobenius induction for algebras*, **Comm. Algebra** **45** (4) (2017), 1542-1557 (joint work with. T. Coconet and A. Marcus).
- 5) *Basic Morita equivalences and a conjecture of Sasaki for cohomology of block algebras of finite groups*, **Quart. J. Math.** **67** (2016), 109-123.
- 6) *A theorem of Mislin for cohomology of fusion systems and applications to block algebras of finite groups*, **Expo. Math.** **33** (2015), 526-534.
- 7) *Symmetric cohomology of groups as a Mackey functor*, **Bull. Belg. Math. Soc. Simon Stevin** **22** (2015), 49-58.

- 8) *On cohomology of saturated fusion systems and support varieties*, **J. Algebra** **402** (2014), 83-91.
- 9) *The extended Brauer quotient of  $N$ -interior  $G$ -algebras*, **J. Algebra** **396** (2013), 10-17 (joint work with T. Coconet)
- 10) *Symmetric algebras, skew category algebras and inverse semigroups*, **J. Algebra** **369** (2012), 226-234.
- 11) *Restriction between cohomology algebras of blocks of finite groups*, **Algebr. Represent. Theory** **14** (2011), 731-749.

Other publications (from International Data Basis, in Romanian or, only for teaching):

- 1) *Concursul zonal de matematică „Mens Sana” Ediția a III-a Câmpeni județul Alba*, Gazeta Matematică-B, Anul CXXII, nr 2/2017, 69-72 (joint work with Vasile Pop).
- 2) *Concursul zonal de matematică „Mens Sana” Ediția a II-a Câmpeni județul Alba*, Gazeta Matematică-B, Anul CXXI, nr 1/2016, 17-20 (joint work with Vasile Pop).
- 3) *Concursul zonal de matematică „Mens Sana...” Ediția I Câmpeni județul Alba*, Gazeta Matematică-B, Anul CXX, nr 3/2015, 127-130 (joint work with Vasile Pop).
- 4) *Hochschild cohomology of fully group-graded algebras as Mackey functor*, Annals of Tiberiu Popovici Seminar **12** (2014), 3-8 (joint work with T. Coconet).
- 5) *On finite generation of Hochschild cohomology algebras of some fully group graded algebras*, Mathematica (Cluj) Tome **55** (78) no. 1 (2013), 89-98.
- 6) *Some remarks on restriction maps between cohomology of fusion systems*, Stud. Univ. Babeș-Bolyai Math. **58** (4) (2013), 443-447.
- 7) *On saturated triples associated to some block algebras of finite groups*, Stud. Univ. Babeș-Bolyai Math. **58** (1) (2013), 5-8.
- 8) *On parabolic subalgebras of inverse-symmetric algebras*, Automat. Comput. Appl. Math. **22** (1) (2013), 203-206.
- 9) *On induction for non-interior  $G$ -algebras and Puig's induction for interior  $G$ -algebras*, Automat. Comput. Appl. Math. **21** (1) (2012), 29-34 (joint work with T. Coconet).
- 10) *On skew group algebras and symmetric algebras*, Stud. Univ. Babeș-Bolyai Math. **57** (1) (2012), 11-14.
- 11) *Remarks on generalized Brauer pairs*, Mathematica (Cluj) Tome **53** (76) no. 1 (2011), 91-96.
- 12) *Remarks on varieties in block cohomology*, Automat. Comput. Appl. Math. **19** (2) (2010), 391-396.
- 13) *New stable elements in Hochschild cohomology algebra*, Mathematica (Cluj) Tome **52** (75) no. 1 (2010), 75-84 (published with some errors).
- 14) *Remarks on definition of group cohomology*, Automat. Comput. Appl. Math. **19** (1) (2010), 193-197.

Books, chapters in books:

- 1) *Coomologia grupurilor și a blocurilor algebrelor grupale*, Editura Fundației pentru Studii Europene, 2010, ISBN 978-606-526-057-3.
- 2) *Special Mathematics. Problems*, U.T. Press, 2014, ISBN 978-973-662-988-4, (joint work with Prof. D. Popa).
- 3) *Teste grilă de matematică Admitere 2015*, colectiv UTCN-coordonator Prof. Dr. D. M. Ivan, U. T. Press, 2015, ISBN 978-606-737-009-6.

## PRESENTATIONS

- Invited talks
- 1) *Basic Morita equivalences and cohomology of blocks of finite groups*, Morita equivalence problems for blocks of finite groups, Lausanne, Switzerland, 05-08 September 2016, <http://cib.epfl.ch/PublicEvent.php?event=1118&tag=all>

- 2) *Bockstein homomorphisms for Hochschild cohomology of group algebras and of blocks of finite groups*, The Eighth Congress of Romanian Mathematicians, Iasi, Romania, 26 June-1 July 2015. <http://www.math.uaic.ro/cmr2015/index.php?talks&ant#ant>

- Contributed talks

- 1) *Blocks of finite groups, fusion systems and cohomology*, “International Congress of Mathematicians 2018” ICM2018 Rio de Janeiro, Brazil, 01-09 August 2018. <http://www.icm2018.org/portal/short-communications-schedule.html>
- 2) *On Hochschild cohomology of blocks of finite group algebras*, “Some Trends in Algebra 2017” Prague, Czech Republic, 04-08 September 2017. <http://www.karlin.mff.cuni.cz/~sta/program.html>
- 3) *On some cohomological algebras in modular representation theory and their BV-algebra (and BD-algebra?) structure*, “Workshop for Young Researchers in Mathematics” 7th Edition, București, 17-20 May 2017. <http://math.univ-ovidius.ro/Workshop/2017/WYRM/Doc/Program-Algebra.pdf?v=170515>
- 4) *Basic Morita equivalences and cohomology of blocks of finite groups*, “Anghelută Conference 2016” Cluj-Napoca, Romania, 05-07 July 2016. <http://www.tucn.ro/angheluta2016/pdf/technical-program-final.pdf>
- 5) *On a Theorem of Mislin for cohomology of saturated fusion systems*, Algebra Symposium, Babes Bolyai University of Cluj-Napoca, Romania, 19-20 April 2013. [http://math.ubbcluj.ro/~aga\\_team/symposium2013/program-cluj2013.pdf](http://math.ubbcluj.ro/~aga_team/symposium2013/program-cluj2013.pdf)
- 6) *Symmetric algebras, skew category algebras and inverse semigroups*, Summer School and Conference YAC’ 2012, EPFL Lausanne, Switzerland, 11-15 June 2012. [http://yam.epfl.ch/schedule\\_1](http://yam.epfl.ch/schedule_1)
- 7) *Remarks on varieties in block cohomology*, The 13<sup>th</sup> International Conference on Applied Mathematics and Computer Science, Technical University of Cluj-Napoca, Romania 26-28 August 2010.
- 8) *New stable elements in Hochschild cohomology algebra*, Algebra Symposium, Babes Bolyai University of Cluj-Napoca, Romania, 15-16 May 2009. [http://math.ubbcluj.ro/~aga\\_team/symposium/program-cluj09.pdf](http://math.ubbcluj.ro/~aga_team/symposium/program-cluj09.pdf)

- Invited seminar talks

- 1) *Cohomology of block algebras of finite groups and Hochschild cohomology*, Université de Picardie „Jules Verne, Amiens, France, 28 May 2012. [http://www.mathinfo.u-picardie.fr/digne/seminaire/sem\\_archives.html](http://www.mathinfo.u-picardie.fr/digne/seminaire/sem_archives.html)

## RESEARCH GRANTS, RESEARCH VISITS and PARTICIPATIONS TO CONFERENCES

- 1) Postdoctoral Researcher in Project “*Factorizations problems for Hopf algebras and related domains*” PN-III-P1-1.1-TE-2016-0124, UEFISCDI, director Ana Agore.
- 2) Open Arms Grant for ICM 2018.
- 3) **Research Mobility Project** 2018, PN-III-P1-1.1-MC-2018-2094, **Project Leader**.
- 4) Research visit to Dr. Charles Eaton, Reader in School of Mathematics, University of Manchester, England, April 2018.
- 5) *Blocks of Finite Groups and Beyond (celebrating B. Külshammer 60th birthday)* Jena Germany, 22-25 July 2015.
- 6) Laboratoire Européen Associé CNRS Franco-Roumain, LEA Math Mode, 2012-2014
  - Université de Picardie team: Radu Stancu, Serge Bouc ;
  - Université de Babes-Bolyai/ Université Technique, Cluj-Napoca team: Andrei Marcus, Constantin-Cosmin Todea.
  - *Bisets in Algebra and Topology*, LAMFA Université de Picardie, Amiens, France, 12-14 September 2012.
- 7) **Postdoctoral Scholarship** *Fusion systems in representations of finite groups and homological algebra*, Innovative Postdoctoral programs for Sustainable development in a Knowledge

based Society- ID 60189, September 2011- February 2013

- Research visit to Maitre de Conf. Radu Stancu, Université de Picardie, Amiens, May 2012
- 8) *Fusion systems and p-local group theory*, July 2011, Copenhagen, Denmark.
- 9) **Research Assistant** of *Equivalences of Categories in the Representation Theory of Finite Groups* (grant ID-532), project director Prof. Dr. Andrei Marcus, October 2007-September 2010, CNCSIS-UEFISCSU:
  - Research visit to Prof. Markus Linckelmann, University of Aberdeen, Scotland, August 2009.
  - *The Representation Dimension of Artin Algebras*, Bielefeld, Germany, May 2008.
  - *Duality and Involutions in Representation Theory*, Maynooth, Republic of Ireland, August 2008.
  - *International Conference on Modules and Representation Theory*, Cluj-Napoca, Romania, July 2008.

## OTHER PROFESSIONAL EXPERIENCE

- Refereeing and Reviewing
  - 1) Reviewer: Math. Reviews, spring 2014-Present; zbMath, spring 2015-Present.
  - 2) Referee: Journal of Algebra, Journal of Algebra and its Applications, Mathematica Bohemica.
- Member of American Mathematical Society; Member of Romanian Mathematical Society; Member of Non-Profit Association “Seminar Theodor Angheluta”
- Member of the Organizing Committee of “Angheluță Conference 2016” Cluj-Napoca, Romania, 05-07 July 2016.
- Co-organizer CONCURSUL INTERJUDEȚEAN DE MATEMATICĂ „MENS SANA...” Câmpeni, jud. Alba, Col. Național „Avram Iancu” Ediția a V-a, 15 decembrie 2018 (and Editions 2014, 2015, 2016)

## TEACHING EXPERIENCE

- Linear Algebra and Geometry-Civil Engineering;
- Special Mathematics (Differential Equations and Theory of Complex Functions)-Electric Engineering;

20.09.2019