# Anca Măcinic

Simion Stoilow Institute of Mathematics of the Romanian Academy
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## CURRENT POSITION

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| *2017-* | Researcher (CS3), Simion Stoilow Institute of Mathematics of the Romanian Academy |

## EDUCATION

**2011** — **Ph.D. in Mathematics**
Simion Stoilow Institute of Mathematics of the Romanian Academy, Ph.D. Thesis *"Algebraic methods in differential topology"*, Advisor CS1 Dr. Ştefan Papadima, thesis sustained 2010 / diploma issued 2011

**2003-2004** — **Master's degree in Mathematics**
Şcoala Normală Superioară Bucharest

**2001-2003** — **Undergraduate program**
Şcoala Normală Superioară Bucharest

**1999-2003** — **Bachelor's degree**
Faculty of Math. and Computer Science, Ovidius Univ., Constanţa

## EMPLOYMENT

**2017 - present** — **Researcher, CS3**
Simion Stoilow Institute of Mathematics of the Romanian Academy

**2011 - 2013** — **Researcher, CS3,** CNCS grant PN-II-RU-PD-2011-3-0149
University of Bucharest

**2006 - 2017** — **Researcher**
Simion Stoilow Institute of Mathematics of the Romanian Academy

**2003 - 2006** — **Junior Researcher**
Simion Stoilow Institute of Mathematics of the Romanian Academy

## GRANTS & AWARDS

**2021-2023** — **Research grant of the Romanian Ministry of Education and Research, CNCS - UEFISCDI, project number PN-III-P4-ID-PCE-2020-2798** (team member), Simion Stoilow Institute of Mathematics of the Romanian Academy

**2011-2013** — **Postdoc grant CNCS grant PN-II-RU-PD-2011-3-0149** (team leader), University of Bucharest

**2009-2011** — **Research grant PN II Idei-1189/2008** (team member), Simion Stoilow Institute of Mathematics of the Romanian Academy

**2006-2008** — **Romanian Ministry of Education and Research, CEEX Grant 2-CEX 06-11-20** (team member), Simion Stoilow Institute of Mathematics of the Romanian Academy

**2005-2007** — **Romanian Ministry of Education and Research, CEEX Grant CEX 05-D11-11** (team member), Simion Stoilow Institute of Mathematics of the Romanian Academy

**2019** — **"GHEORGHE LAZAR" prize of the Romanian Academy**

## PUBLICATIONS

**2024** — *Deletion-addition of a smooth conic for free curves*, preprint, arXiv:2408.11714

2024    *On some freeness-type properties for line arrangements* (with T. Abe and D. Ibadula), **Ann. Sc. Norm. Super. Pisa Cl. Sci.** (5) Vol. XXV (2024), 427–447, DOI: $10.2422/2036 - 2145.202105\_038$

2024    *Addition-deletion results for plus-one generated curves (with P. Pokora)*, **J. Algebr. Comb.** Vol. 60, 723 – 734 (2024) DOI: https://doi.org/10.1007/s10801-024-01350-x

2024    *A geometric perspective on plus-one generated arrangements of lines (with J. Vallès)*, **International Journal of Mathematics** Vol. 35, No. 10, 2450034 (2024), DOI: 10.1142/S0129167X24500344

2023    *On plus-one generated conic-line arrangements with simple singularities (with P. Pokora)*, to appear in **Rendiconti Lincei – Matematica e Applicazioni**

2022    *On torsion freeness for the decomposable Orlik-Solomon algebra*, preprint, arXiv:2212.12275

2020    *Numerical invariants and moduli spaces for line arrangements* (with A. Dimca and D. Ibadula), **Osaka Journal of Mathematics**, Vol. 57, No.4, 847 – 870 (October 2020), https://doi.org/10.18910/77234

2019    *Freeness for 13 lines arrangements is combinatorial* (with A. Dimca and D. Ibadula), **Discrete Mathematics**, Volume: 342, Issue: 8, Pages: 2445-2453 ISSN: 0012-365X, https://doi.org/10.1016/j.disc.2019.05.016

2017    *On the geometry and topology of partial configuration spaces of Riemann surfaces* (with B. Berceanu, Ş. Papadima and R. Popescu), **Algebraic & Geometric Topology**, 17, no. 2, 1163-1188, DOI: 10.2140/agt.2017.17.1163

2017    *Modular equalities for complex reflection arrangements*, (with Ş. Papadima and R. Popescu), **Documenta Mathematica**, Vol. 22, 135–150, DOI 10.4171/DM/561

2017    *Flat connections and resonance varieties: from rank one to higher ranks*, (with Ş. Papadima, R. Popescu and A. Suciu), **Trans. Amer. Math. Soc.** 369, 1309–1343, DOI: https://doi.org/10.1090/tran/6799

2016    *Pencil type line arrangements of low degree: classification and monodromy*, (with A. Dimca and D. Ibadula), **Ann. Scuola Norm. Sup. Pisa**, (5) Vol. XV, 249–267, DOI: $10.2422/2036 - 2145.201306\_003$

2015    *On the second nilpotent quotient of higher homotopy groups for hypersolvable arrangements* (with D. Matei and Ş. Papadima), **International Mathematics Research Notices**, Volume 2015, Issue 24, Pp. 13194–13207, https://doi.org/10.1093/imrn/rnv080

2014    *Some remarks on the realizability spaces of $(3, 4)$-nets*, (with D. Ibadula), Proceedings of the conference "Experimental and Theoretical Methods in Algebra, Geometry and Topology", Bridging Algebra, Geometry, and Topology, **Springer Proceedings in Mathematics & Statistics**, 159–166, DOI:$10.1007/978 - 3 - 319 - 091860\_10$.

2010    *Cohomology rings and formality properties of nilpotent groups,* **Journal of Pure and Applied Algebra** 214, pp. 1818–1826, https://doi.org/10.1016/j.jpaa.2009.12.025

2009    *Characteristic varieties of nilpotent groups and applications*, (with Ş. Papadima), **Proceedings of the Sixth Congress of Romanian Mathematicians (Bucharest, 2007)**, vol.1, pp. 57–64, Romanian Academy, Bucharest.

2009    *On the monodromy action on Milnor fibers of graphic arrangements*, (with Ş. Papadima), **Topology and its Applications** 156, 761-774, https://doi.org/10.1016/j.topol.2008.09.014

2009    *A survey of combinatorial aspects in the topology of complex hyperplane arrangements*, **Contemporary Mathematics** 508, 113-128, DOI: 10.1090/conm/502/09859.

## RESEARCH VISITS

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| *November 18-22 2024* | **Institut für Algebra, Zahlentheorie und Diskrete Mathematik, Leibniz Universität Hannover** |
| *August 7-19 2016* | **Oberwolfach Research Institute for Mathematics, Research In Pairs grant** (with Alexandru Dimca and Denis Ibadula) |
| *November 18-23 2013* | **Osnabrück Univ., Institut für Mathematik** |
| *March, November 2012 (2 weeks)* | **Université Sophia-Antipolis Nice** |

## TALKS & CONFERENCES ATTENDED

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| *November 21, 2024* | "Freeness-type properties and combinatorics of line arrangements", talk presented at Oberseminar Algebra, Zahlentheorie und Diskrete Mathematik, Institut für Algebra, Zahlentheorie und Diskrete Mathematik, Leibniz Universität Hannover. |
| *September 9-13, 2024* | "Line arrangements and their combinatorics", talk presented at the Research School Topology and Algebra of Singularities and their Applications, Ovidius University, Constanta. |
| *July 7-11, 2023* | "A Yoshinaga-type criterion for POG arrangements", talk presented at Geometry, Topology and Algebra of Singular Spaces, IMAR, Bucharest, Romania. |
| *May 18-19, 2023* | "Ziegler restrictions and combinatorics of line arrangements", talk presented at Workshop for Young Researchers in Mathematics, 12th edition, Alexandru Ioan Cuza University, Iaşi, Romania. |
| *May 20-24, 2019* | "Freeness and variations", talk presented at The 27th National School on Algebra, IMAR Bucharest. |
| *June 26 - July 1, 2015* | "(Multi)nets and monodromy", talk presented at the 8-th Congress of the Romanian Mathematicians, Alexandru Ioan Cuza University, Iasi. |
| *November 19, 2013* | "Combinatorics in the topology of hyperplane arrangements", talk presented at the "Graduiertenkollegseminar on combinatorial structures in geometry", Osnabrück Univ., Institut für Mathematik. |
| *May 09 - May 10, 2013* | "Orlik-Solomon algebras", talk presented at the Workshop for Young Researchers in Mathematics, Ovidius University, Constanta, Romania. |
| *June 27 - 30, 2013* | "On the second nilpotent quotient of higher homotopy groups for hypersolvable arrangements", talk presented at the Joint International Meeting of the AMS and the Romanian Mathematical Society, Special Session: Topics in Geometric and Algebraic Topology, "1 Decembrie 1918" University of Alba Iulia, Romania. |
| *September 2-6, 2013* | "Hyperplane arrangements" , talk presented at The 21st National School on Algebra "Algebraic Methods in Combinatorics", IMAR Bucharest. |
| *August 29-September 1, 2013* | "Pencil type line arrangemens of low degree and monodromy", talk presented at the Anniversary Conference Faculty of Sciences - 150 years, Faculty of Mathematics and Computer Science, University of Bucharest. |
| *June 11 - 15, 2012* | "(Partial) formality", talk presented at the conference Arrangements in Pyrénées School on hyperplane arrangements and related topics, Université de Pau. |
| *March 6, 2012* | "Graphic arrangements, combinatorial computations and monodromy action on the Milnor fiber", talk presented at the conference Hyperplane Arrangements and Related Topics, Université Sophia-Antipolis Nice. |
| *May 12 - 13, 2011* | "Partial formality and cohomology jump loci", talk presented at the Workshop for Young Researchers in Mathematics, Ovidius University Constanta. |

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| *June 28 June - July 4, 2007* | "Cohomology jumping loci and formality properties of nilpotent groups", talk presented at The 6th International Congress of the Romanian Mathematicians, Bucharest, Romania. |
| *August, 2006* | "On the monodromy action on Milnor fibers of graphic arrangements", talk presented at the workshop "Recent developments in Arrangements and Configuration Spaces", MSRI, Berkeley, US. |
| *August 29 - September 2, 2005* | "The Milnor fiber associated to graphic arrangements", talk presented at the workshop "Hyperplane arrangements and constructible sheaves", Constanta, Romania. |

## EVENTS ORGANIZED

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| *11 -15 September, 2023* | "Moduli and Friends", Simion Stoilow Institute of Mathematics of the Romanian Academy, Bucharest, Romania (co-organizer). |
| *June 28 - July 3, 2019* | "Selected Topics in Complex and Differential Geometry, Topology, and Singularities", Special Session of The Ninth Congress of Romanian Mathematicians, "Dunarea de Jos" University of Galati, Romania (co-organizer). |
| *June 3-4, 2019* | "Workshop for Young Researchers in Mathematics", University of Bucharest (co-organizer). |
| *May 28 - 31, 2018* | "Topology and Geometry: A conference in memory of Stefan Papadima", Simion Stoilow Institute of Mathematics of the Romanian Academy(co-organizer). |
| *May 17 - 18, 2018* | "Workshop for Young Researchers in Mathematics", Simion Stoilow Institute of Mathematics of the Romanian Academy(co-organizer). |
| *May 17 - 20, 2017* | "Workshop for Young Researchers in Mathematics", Simion Stoilow Institute of Mathematics of the Romanian Academy(co-organizer). |
| *May 19 - 22, 2016* | "Workshop for Young Researchers in Mathematics", Ovidius University Constanta (co-organizer). |
| *July 6 - 10, 2015* | "Computational Geometric Topology in Arrangement Theory", ICERM, Brown University, USA (co-organizer). |
| *May 21– 24, 2015* | "Workshop for Young Researchers in Mathematics", Ovidius University Constanta (co-organizer). |
| *May 22–23, 2014* | "Workshop for Young Researchers in Mathematics", Ovidius University Constanta (co-organizer). |
| *May 9–10, 2013* | "Workshop for Young Researchers in Mathematics", Ovidius University Constanta (co-organizer). |
| *June 21–24, 2013* | "Experimental and Theoretical Methods in Algebra, Geometry and Topology", Eforie Nord, Ovidius University Constanta & IMAR (co-organizer). |