Cezar Joiţa

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RESEARCH INTERESTS:

- Several Complex Variables
- Complex Geometry
- Singularity Theory

EDUCATION:

- 1995 - 2000, Doctoral Program in Mathematics at SUNY at Buffalo, U.S.A. Ph.D. in Mathematics, June 2000. Advisor: Mohan Ramachandran.
- 1988 - 1993, The Faculty of Mathematics, University of Bucharest, Romania. Advisor: Martin Jurchescu.

EMPLOYMENT:

- 2004 - present: Researcher at the Institute of Mathematics "Simion Stoilow" of the Romanian Academy, Bucharest, Romania.
- 2002 - 2004: Everett Pitcher Visiting Professor at Lehigh University, U.S.A.
- 2000 - 2002: Postdoctoral Fellow at The University of Western Ontario, Canada.
- 1995 - 2000: Teaching Assistant, SUNY at Buffalo, U.S.A.
- 1993 - 1995: Researcher at Institute of Mathematics "Simion Stoilow" of the Romanian Academy, Bucharest, Romania.

SERVICES:

- Scientific Secretary, Institute of Mathematics of the Romanian Academy, 2012 - 2016.
- Member of the Romanian National Research Council, 2011 - 2013 and 2020

AWARDS:

- "Simion Stoilow" Prize of the Romanian Academy awarded in 2009 for papers published in 2007.

Editorial activities:

- 2017 - present, Revue Roumaine de Mathématiques Pures et Appliquées - scientific secretary of the editorial board
- 2017 - present, Mathematical Reports - scientific secretary of the editorial board
- 2022 - present, Proceedings of the Romanian Academy, series A - editorial board

OTHERS:

- Marie Curie International Reintegration Grant, 2005 - 2007.

PUBLICATIONS:

37. Cezar Joiţa, Mihai Tibăr: Bifurcations of polynomial maps with diffeomorphic and connected fibers. *Bull. Math. Soc. Sci. Math. Roumanie* **68** (116) (2025), 293–302.

36. Cezar Joiţa, Matteo Stockinger , Mihai Tibăr: Tame deformations of highly singular function germs. *J. Geom. Phys.* **213** (2025), Paper No. 105471.

35. Ying Chen, Cezar Joiţa, Mihai Tibăr: Deformations with fibre constancy. *Bull. Sci. Math.* **197** (2024), Paper No. 103520.

34. Ying Chen, Cezar Joiţa, Mihai Tibăr: Fibrations of tamely composable maps *J. Geom. Phys.* **194** (2023), Paper No. 105025.

33. Cezar Joiţa: Polynomial convexity properties of closure of domains biholomorphic to balls. *Studia Universitatis Babes-Bolyai Mathematica* **67** (2022), 309–316.

32. Cezar Joiţa, Mihai Tibăr: The local image problem for complex analytic maps. *Arkiv för Matematik* **59** (2021), 345–358.

31. Luis Renato G. Dias, Cezar Joiţa, Mihai Tibăr: Atypical points at infinity and algorithmic detection of the bifurcation locus of real polynomials. *Mathematische Zeitschrift* **298** (2021), 1545–1558.

30. Mihnea Colţoiu, Cezar Joiţa: Geometric Convexity Properties of Coverings of 1-Convex Surfaces. *The Journal of Geometric Analysis* **31** (2021), 475–489.

29. Cezar Joiţa, Mihai Tibăr: Images of analytic map germs and singular fibrations. *European Journal of Mathematics* **6** (2020), 888–904.

28. Mihnea Colţoiu, Cezar Joiţa: Some problems related to the Levi problem for Riemann domains over Stein spaces. *Complex Variables and Elliptic Equations* **65** (2020), 713–716.

27. Cezar Joiţa, Mihai Tibăr: Bifurcation set of multi-parameter families of complex curves. *Journal of Topology* **11** (2018), 739–751.

26. Hervé Gaussier, Cezar Joiţa: On Runge neighborhoods of closures of domains biholomorphic to a ball. Geometric Function Theory in Higher Dimension, Springer INdAM Series 2018, 63–66.

25. Cezar Joiţa, Mihai Tibăr: Bifurcation values of families of real curves. *Proceedings of the Royal Society of Edinburgh, Section: A Mathematics* **147** (2017), 1233–1242.

24. Mihnea Colţoiu, Cezar Joiţa: Convexity properties of intersections of decreasing sequences of q-complete domains in complex spaces. *Publications of the Research Institute for Mathematical Sciences* **53** (2017), 587 – 595.

23. Mihnea Colţoiu, Cezar Joiţa: Finite coverings of complex spaces by connected Stein open sets. *Mathematische Zeitschrift* **287** (2017), 929 – 946.

22. Mihnea Colţoiu, Cezar Joiţa: On Runge-curved domains in Stein spaces. *Annali della Scuola Normale Superiore di Pisa* (5), **XVI** (2016), no. 4, 1185–1192.

21. Mihnea Colţoiu, Cezar Joiţa: On the parametrization of germs of two-dimensional singularities. *The Journal of Geometric Analysis* **25** (2015), 2427–2435.

20. Mihnea Colţoiu, Cezar Joiţa: On the separation of the cohomology of universal coverings of 1-convex surfaces. *Advances in Mathematics*, **265** (2014), 362–370.

19. Mihnea Colţoiu, Klas Diederich, Cezar Joiţa: On complex spaces with prescribed singularities. *Mathematical Research Letters* **20** (2013), no. 5, 857–868.

18. Mihnea Colţoiu, Cezar Joiţa: Convexity properties of coverings of 1-convex surfaces. *Mathematische Zeitschrif* **275** (2013), no. 3-4, 781 – 792.

17. Mihnea Colţoiu, Cezar Joiţa: On the open immersion problem. *Mathematische Annalen* **356** (2013), no.3, 1203 – 1211.

16. Mihnea Colţoiu, Natalia Gaşiţoi, Cezar Joiţa: On the image of an algebraic projective space. *Comptes Rendus Mathematique* **350** (2012), no. 5-6, 239–241.

15. Mihnea Colţoiu, Cezar Joiţa, Mihai Tibăr: q-convexity properties of the coverings of a link singularity. *Publications of the Research Institute for Mathematical Sciences* **48** (2012), no. 2, 409–417.

14. Cezar Joiţa: The disk property. A short survey. *An. Stiint. Univ. "Ovidius" Constanta Ser. Mat.* **20** (2012), no. 2, 35–42.

13. Mihnea Colţoiu, Cezar Joiţa: The disk property of coverings of 1-convex surfaces. *Proceedings of the AMS* **140** (2012), no. 2, 575–580.

12. Mihnea Colţoiu, Cezar Joiţa: The Levi problem in the blow-up. *Osaka Journal of Mathematics* **47** (2010), no. 4, 943–947.

11. Cezar Joiţa: Prescribing Projections of Runge Domains in Stein Spaces. *Mathematical Reports* **12** (2010), no. 2, 137–143.

10. Gabriel Chiriacescu, Mihnea Colţoiu, Cezar Joiţa: Analytic cohomology groups in top degrees of Zariski open sets in $\mathbb{P}^n$. *Mathematische Zeitschrift* **264** (2010), no. 3, 671–677.

9. Cezar Joiţa, Daniela Joiţa: Minors in Weighted Graphs. *The Bulletin of the Australian Mathematical Society* **77** (2008), no. 3, 455–464.

8. Cezar Joiţa: On Uniformly Runge Domains. *Journal of Mathematics of Kyoto University* **47** (2007), no. 4, 875–880.

7. Cezar Joiţa: On a problem of Bremermann concerning Runge domains. *Mathematische Annalen* **337** (2007), no. 2, 395–400.

6. Cătălin Georgescu, Cezar Joiţa, William Nowell, Pantelimon Stanică: Chaotic dynamics of a rational map. *Discrete and Continuous Dynamical Systems*, Series A **12** (2005), no.2, 363-375.

5. Cezar Joiţa, Pantelimon Stanică: Inequalities related to rearrangements of powers and symmetric polynomials. *JIPAM. J. Inequal. Pure Appl. Math.* **4** (2003), no. 2.

4. Cezar Joiţa, Finnur Lárusson: The third Cauchy-Fantappie formula of Leray. *Michigan Mathematical Journal* **51** (2003), no. 2, 339-350.

3. Cezar Joiţa: Traces of Convex Domains. *Proceedings of the AMS* **131** (2003) no. 9, 2721-2725.

2. Cezar Joiţa: On the n-concavity of covering spaces with parameters. *Mathematische Zeitschrift* **245** (2003), no. 2, 221-231.

1. Cezar Joiţa: On the projection of pseudoconvex domains. *Mathematische Zeitschrift* **233** (2000), no. 4, 625-631.

TALKS:

- *Euclidean distance discriminants and Morse attractors.* Geometric Function Theory in Several Complex Variables and Complex Banach Spaces, Cluj-Napoca, Romania, November 28 - 30, 2025.
- *On germs of holomorphic maps with two dimensional targets.* Geometry VB80, Institute of Mathematics of the Romanian Academy, Bucharest, October 1-2, 2025.
- *Introduction to algorithmic desingularization; applications.* Research School "Singularities and Applications to Optimization", Institute of Mathematics of the Romanian Academy, Bucharest, September 1-5, 2025.
- *Projections of connected Stein open subsets.* From Complex Analysis to Quantization, Chern Institute of Mathematics (CIM), Nankai University, Tianjin, China, May 12 - 16, 2025.
- *Deformations of analytic map germs.* Geometric Function Theory in Several Complex Variables and Complex Banach Spaces, Cluj-Napoca, Romania, November 29 - December 1, 2024.
- *Fibrations of real maps and applications to Bifurcations.* Research School "Topology and Algebra of Singularities and their Applications", University Ovidius Constanţa, Romania, September 9-13, 2024.
- *Tame deformations of highly singular function germs.* Séminaire "Géométrie des espaces singuliers", University of Lille, April 16, 2024.
- *What is the image of an analytic map germ?* Séminaire "Analyse complexe et équations différentielles", University of Lille, April 15, 2024.
- *Tame deformations of highly singular function germs.* Real Singularities in Spring, University of Lille, March 26, 2024.
- *Deformations of singular function germs.* Geometric Function Theory in Several Complex Variables and Complex Banach Spaces, Cluj-Napoca, December 2023.
- *On germs of morphisms between complex spaces.* Seminar semiklassische Analysis und Darstellungstheorie, Universität zu Köln, Germany, October 17, 2023.
- *Fibrations.* Research School "Singularities and Applications", Université de Lille June 19-23, 2023.
- *Stein spaces: images.* University of Bucharest, Department of Mathematics, Monthly Conference, May 4, 2023.
- *Projection of connected Stein open subsets via surjective holomorphic maps.* Geometric Function Theory in Several Complex Variables and Complex Banach Spaces, Cluj-Napoca, December 2022.

- *Bifurcation of affine maps in real and complex settings.* CIMPA Research School "Singularities and Applications", Sao Carlos, Brazilia, 11–22 iulie, 2022
- *The local image problem for complex analytic maps.* Geometric Function Theory in Several Complex Variables and Complex Banach Spaces, Cluj-Napoca, December 1 - 3, 2021.
- *Prescribing images of connected Stein open sets in complex spaces*, Séminaire d'Analyse Complexe, Université de Lille, 21 iunie 2021.
- *Beyond the Open Mapping Theorem: local image problem and singular fibrations*, Journée "Singularities at Solstice", June 18, 2021.
- *The image problem for analytic map germs*, Arc spaces and geometry of singularities Université de Lille, October 15-16, 2019.
- *Local triviality of analytic mappings*, 15th Romanian-Finnish Analysis Seminar, University of Turku, June 10-12, 2019
- *Bifurcation set of multi-parameter families of complex curves*, The singular side, Université de Lille, May 16 - 17, 2018.
- *Finite coverings of complex spaces by connected Stein open sets*, Complex Analysis and Geometry - XXIII, Levico Terme, 2017.
- *Bifurcation locus of polynomial maps*, Geometric Function Theory in Higher Dimension, Cortona, 2016.
- *Bifurcation set of families of complex curves*, Workshop for Young Researchers in Mathematics 6^{th} edition, Constanţa, May 19 - 22, 2016
- *On the parametrization of germs of two-dimensional singularities*, Babes-Bolyai University, Cluj-Napoca, 2016.
- *On coverings of 1-convex surfaces*, l'Institut de Mathématiques de Jussieu, Paris, 2015.
- *Covering complex spaces by finitely many connected Stein sets*, Université Lille 1, 2015.
- *Finite coverings of complex spaces by connected Stein open sets*, The Eighth Congress of Romanian Mathematicians, Iasi, 2015.
- *Analytic convexity - a short introduction*, Summer School in Cologne: Topics in Complex Analysis, Cologne, 2014.
- *Complex spaces with prescribed singular locus*, Gheorghe Bucur 75 Conference, Bucharest, 2014.
- *On the parametrization of germs of two-dimensional singularities*, Université Lille 1, 2013.

- *Stein spaces and open imersions in Stein spaces*, University of Bucharest, 2013
- *Coverings of a link singularity and q-convexity*, Université Lille 1, 2011.
- *On coverings of 1-convex surfaces*, Université Lille 1, 2011.
- *On the disk property of coverings of 1-convex surfaces*, The Seventh Congress of Romanian Mathematicians, Brasov, 2011.
- *Analytic convexity via lower dimensional objects*, The 10th International Workshop on Differential Geometry and its Applications Ovidius University, Constanta, 2011.
- *Coverings of 1-convex manifolds*, Constantin Bănică Memorial Conference, Bucharest, 2011.
- *Cohomological q-convexity in top degrees for Zariski open sets in* $\mathbb{P}^n$, Journée "Lille-Bucuresti", Lille, 2010.
- *Analytic convexity in complex manifolds*, The 18th conference on applied and industrial mathematics, Iaşi, 2010.
- *Generically strongly q-convex complex spaces*, IMAR 60 International Conference, Bucharest, 2009.
- *Extending Kähler metrics from subvarieties*, The 11th Romanian - Finnish Seminar, Alba-Iulia, 2008.
- *Generically strongly q-convex complex spaces*, Humboldt Universitat zu Berlin, Complex Analysis Seminar 2006
- *Polynomially convex domains are not characterized by intersections with complex lines*, Journée d'Analyse Géométrique "Bucuresti-Lille" - Université Lille 1, 2006.
- *On a problem of Bremermann concerning Runge domains*, The Xth Romanian-Finish Seminar, Cluj-Napoca 2005
- *On a problem of Bremermann concerning Runge domains*, Humboldt Universitat zu Berlin, Complex Analysis Seminar 2005
- *Analytic Convexity*, IMAR Monthly Lectures, 2004.
- *A few observations regarding Runge pairs*, Syracuse University, 2004.
- *On uniformly Runge domains in a Stein manifold*, Lehigh University Geometry/Topology Conference, 2003.
- *An abstract notion of convexity*, Auburn University at Montgomery, 2003.
- *Different Notions of Convexity and Concavity in Complex Analysis*, Lehigh University, 2002.
- *The Third Cauchy-Fantappie formula of Leray*, University of Western Ontario, 2002.

- *The Third Cauchy-Fantappie formula of Leray*, SUNY at Stony Brook, 2002.
- *Convexity and Concavity in Complex Analysis*, Wichita State University, 2002
- *Traces of Convex Domains*, Complex Analysis Conference, University of Michigan, Ann Arbor, 2001
- *On Locally Hyperconvex Stein Domains*, Lehigh University Geometry/Topology Conference, 2001.
- *On Runge domains in* $\mathbf{C}^n$, University of Western Ontario, 2000.
- *On the n-concavity of Covering Spaces with Parameters*, AMS Meeting, Washington DC, 2000.
- *On the n-concavity of Covering Spaces with Parameters*, SUNY at Buffalo, 1999.
- *On the Projection of Runge domains*, Special Session on Complex Geometry, AMS Regional Meeting, Buffalo, 1998
- *Analytic Convexity and Vanishing Theorems*, SUNY at Buffalo, 1997.