

Curriculum Vitae

Baldur Sigurðsson
+52 55 4229 0017
baldur@im.unam.mx
<https://notendur.hi.is/~bas4/>
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Universidad Nacional Autónoma de México
Instituto de Matemáticas, Unidad Cuernavaca
Av. Universidad s/n
Col. Lomas de Chamilpa 62210
Cuernavaca, Morelos, México

Education

- PhD Mathematics, Central European University (CEU), Budapest, Hungary, 2010-2015.
- MSc Mathematics, Eötvös Loránd Tudományegyetem (ELTE), Budapest, Hungary, 2008-2010.
- BS Mathematics, University of Iceland, Reykjavík, Iceland, 2005-2008.
- Gymnasium, Science line, Menntaskólinn Hraðbraut, Reykjavík, Iceland, 2003-2005.

Thesis

- *The geometric genus and Seiberg–Witten invariant of Newton nondegenerate surface singularities*, Advisor: Némethi András, defended December 1, 2015, with summa cum laude, arXiv:1601.02572.

Employment

- December 2018-: Postdoc at Universidad Nacional Autónoma de México, Cuernavaca.
- April 2018-November 2018: Juan de la Cierva Postdoc Fellow at Basque Center for Applied Mathematics.
- March 2016-March 2018: ERC Postdoc Fellow at Basque Center for Applied Mathematics.
- September 2013-February 2016: ERC postdoctoral fellow at the Alfréd Rényi Institute for Mathematics in Budapest.
- Summer 2007: Writing of educational material on solving differential equations in Maple as well as teaching material in elementary linear algebra for the Science Institute of the University of Iceland.

Published articles

- The boundary of the Milnor fiber of the singularity $f(x, y) + zg(x, y) = 0$, approved for publication in European Journal of Mathematics.
- The geometric genus of hypersurface singularities. Joint with András Némethi. J. Eur. Math. Soc. (JEMS) 18, No. 4, 825-851 (2016).
- The Milnor fiber of the singularity $f(x, y) + zg(x, y) = 0$. Rev. Mat. Complut. (2016) 29: 225. doi:10.1007/s13163-015-0179-5.

Preprints

- Mixed tête-à-tête twists as monodromies associated with holomorphic function germs, joint with Pablo Portilla Cuadrado, 2017, submitted.
- On ideal filtrations for Newton nondegenerate surface singularities, 2019, submitted.

Manuscripts in preparation

- Newton nondegenerate Weil divisors in toric varieties, joint with András Némethi.
- Harmonic functions in local tropical geometry.

Conference talks

- The geometric genus and Seiberg–Witten invariant of Newton nondegenerate Weil divisors in a toric space, Workshop on Topological and Analytical Methods in Singularity Theory, CIMAT, November 14, 2019, Guanajuato, Mexico.
- The boundary of the Milnor fiber of the singularity $f(x, y) + zg(x, y) = 0$, Lipschitz Geometry of Singularities, October 23, 2018, Oaxaca, Mexico.
- The geometric genus and Seiberg–Witten invariant of Newton nondegenerate surface singularities, 4° Congreso de Jóvenes Investigadores, September 4-8, 2017, Valencia, Spain.
- The geometric genus and Seiberg–Witten invariant of Newton nondegenerate surface singularities, Singularities, September 25-October 1, 2016, Oberwolfach, Germany.
- The geometric genus of hypersurfaces, 13th International Workshop on Real and Complex Singularities Celebrating the 60th birthday of María del Carmen Romero Fuster, July 27-August 1, 2014, São Carlos, Brazil, slides.

Seminar presentations

- Divisores Weil Newton no degenerados en variedades tóricas, Seminario de Álgebra Conmutativa y Geometría Algebraica, CIMAT, May 6, 2019, Guanajuato, Mexico.
- The boundary of the Milnor fiber of the hypersurface singularity $f(x, y) + zg(x, y) = 0$, Séminaire Singularités, FRUMAM, Université Aix-Marseille, November 23, 2017, Marseille, France.
- The boundary of the Milnor fiber of the hypersurface singularity $f(x, y) + zg(x, y) = 0$, Seminar, Géométrie des espaces singuliers, Laboratoire Paul Painlevé, December 13, 2016, Lille, France.
- The geometric genus and Seiberg–Witten invariant of Newton nondegenerate surface singularities, Algebraic Geometry and Differential Topology Seminar, Alfréd Rényi Institute of Mathematics, October 16, 2015, Budapest, Hungary.
- The geometric genus of hypersurface singularities, Algebraic Geometry and Differential Topology Seminar, Alfréd Rényi Institute of Mathematics, March 14, 2014, Budapest, Hungary.

Visits

- Marseille, France, November 21-25, 2017, invited by Anne Pichon at Institut de Mathématiques de Marseille.
- Lille, France, December 11-15, 2016, invited by Patrick Popescu-Pampu at Le laboratoire de mathématiques Paul Painlevé, Université de Lille.
- Budapest, Hungary, April 17-23, 2016, invited by András Némethi at the Alfréd Rényi Institute of Mathematics.

Learning seminar talks

- Introduction to Heegaard-Floer homology, Seminario de Geometría Algebraica y Singularidades, BCAM, May 5 and 26, 2017, Bilbao, Spain.
- Newton nondegenerate surface singularities, Seminario de Geometría Algebraica y Singularidades, BCAM, November 11, December 1, 2016, Bilbao, Spain.
- Introduction to normal surface singularities, Seminario de Geometría Algebraica y Singularidades, BCAM, October 21, 2016, Bilbao, Spain.
- The spectrum of hypersurface singularities, Seminario de Geometría Algebraica y Singularidades, BCAM, May 2016, Bilbao, Spain.
- Mixed Hodge structures on cohomologies of smooth varieties, Singularity theory and low dimensional topology seminar, Alfréd Rényi Institute of Mathematics, March 19 and 26, 2013, Budapest, Hungary.
- Basic Hodge theory, Singularity theory and low dimensional topology seminar, Alfréd Rényi Institute of Mathematics, November 29 and December 6, 2012, Budapest, Hungary.

Conferences attended

- Workshop on Topological and Analytical Methods in Singularity Theory, CIMAT, Guanajuato, Mexico, November 4-15, 2019.
- Tropical Methods in Real Algebraic Geometry Casa Matemática Oaxaca, Oaxaca, Mexico, September 8-13, 2019.
- Non-Isolated Singularities and derived Geometry, A celebration of the 60th birthday of David Massey, UNAM, Cuernavaca, Mexico, July 29 - August 3, 2019.
- 4th meeting on singularities Brazil-Chile-Mexico, Universidad de Talca, Talca, Chile March 11-15, 2019.
- Lipschitz Geometry of Singularities, Casa Matemática Oaxaca, Oaxaca, Mexico. October 21-26, 2018.
- 15th International Workshop on Real and Complex Singularities, Universidade de São Paulo, Campus São Carlos, São Carlos, Brazil, July 22-28, 2018,
- 4º Congreso de Jóvenes Investigadores, Real Sociedad Matemática Española, Universitat de València, Valencia, Spain, September 4-8, 2017.
- A Panorama on Singular Varieties: A conference to celebrate Lê Dũng Tráng's 70th Birthday, IMUS, Sevilla, Spain, February 7-10, 2017.
- Singularities, Oberwolfach, Germany, September 26-30, 2016.
- Conference of the Belgian, Royal Spanish and Luxembourg Mathematical Societies, Logroño, Spain, June 6-8, 2016.
- Algebra, Geometry and Topology of Singularities, Galatasaray University, Istanbul, Turkey May 8-12, 2016.
- Local and global Invariants of Singularities, En l'honneur de Jean-Paul Brasselet à l'occasion de son 70ème anniversaire, CIRM, Luminy, France, February 23-27, 2015.
- Workshop on Singularities in geometry, topology, foliations and dynamics 2014, A celebration of the 60th birthday of Pepe Seade, Universidad Autónoma de Yucatan, Mérida, Mexico, December 8-19, 2014.
- 13th International Workshop on Real and Complex Singularities, Celebrating the 60th birthday of María del Carmen Romero Fuster, ICMC, São Carlos, Brazil, July 27-August 1, 2014.
- Algebra and Geometry and Topology of Singularities, On the occasion of the 60th birthday of I. Luengo, La Cristalera, Miraflores de la Sierra, Spain, September 9-13, 2013.
- Singularities in geometry and applications III, ICMS, Edinburgh, UK, September 02-06, 2013.
- Geometry and topology of smooth 4-manifolds, Max Planck Institute for Mathematics, Bonn, Germany, June 3-7, 2013.
- Geometry and topology of complex singularities, CIRM, Luminy, France, April 15-19, 2013.
- Conference on singularities and geometry-topology in honour of Sabir M. Gusein-Zade with occasion of his 60th birthday, El Escorial, Madrid, Spain, October 10-16, 2010.

Schools attended

- Introduction To Geometric Analysis: The Atiyah-Singer Index Theorem, BCAM-UPV/EHU, Bilbao, Spain, June 5-23, 2017.
- Deformations in Turin, University of Turin, Turin, Italy, July 5-8, 2017.
- Workshop on Algebra, Geometry and Topology of Singularities, Gebze Technical University, Istanbul, Turkey, May 2-7, 2016.
- School on Singularity theory in topology, geometry and foliations, Instituto de Matemáticas (Unidad Cuernavaca) of the Universidad Nacional Autónoma de México (UNAM), November 24-December 5, 2014.
- Moduli and Automorphic forms, IRTG and Alfréd Rényi Institute of Mathematics, Budapest, Hungary, August 25-30, 2014.

- Applications of étale cohomology, Alfréd Rényi Institute of Mathematics, Budapest, Hungary, June 16-20, 2014.
- New aspects on Singularity Theory, ICMAT, Madrid, Spain, September 16-27, 2013.
- Topology of singularities, University of Mainz, Mainz, Germany, September 19-23, 2011.
- Singularities: algebra, geometry and applications, Institute of Mathematics of the National Academy of Sciences of Ukraine and Kiev National Taras Shevchenko University, Kiev, Ukraine, August 8-19, 2011.
- School on D-modules and applications in Singularity Theory, CSIC, ICMAT and IMUS, Sevilla, June 20-25 and Madrid June 27-July 2, Spain, 2011.

Teaching Experience

- Problem sessions in algebraic topology, University of the Basque Country, UPV/EHU, Spain, March 2017.
- Teaching Assistant, Real Analysis, Weekly exercise sessions and correction of problems, University of Iceland, Iceland, Spring 2008.
- Teaching Assistant, Analysis IIIB, Weekly exercise sessions and correction of problems, University of Iceland, Iceland, Fall 2007.

Misc

- Award for Advanced Doctoral Students, CEU, Budapest, Hungary, academic year 2012/2013.
- Second honorable mention in the Schweitzer Miklós Memorial Competition 2008, Budapest, Hungary.
- Participant in International Mathematical Olympiad, 3 points, July 8-19, 2005, Mérida, Mexico.
- On Honorary List of students academic year 2004/2005, Hraðbraut Gymnasium, Reykjavík, Iceland.

Software

- Sage An implementation of Neumann's plumbing calculus in Sage. Ticket #26945 on the trac server.
- lattice A program that calculates the root and Euler characteristics of lattice cohomology defined by Némethi. Written in C, available on author's webpage.
- Oka A collection of functions related to surface singularities, among them an implementation of Oka's algorithm for the resolution of Newton nondegenerate hypersurfaces. Written in PARI/GP, available on author's webpage.

Languages

- Icelandic, native,
- English, fluent,
- Spanish, conversational,
- Danish, Hungarian, less than fluent.