Irfan Glogić **Curriculum Vitae (June '25)**

CONTACT INFORMATION

Faculty of Mathematics
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APPOINTMENTS

Bielefeld University, Germany
Junior Professor, Faculty of Mathematics, 2024 –

University of Vienna, Austria
Senior postdoc, Faculty of Mathematics, 2021 – 2024
Principal investigator for FWF Project P 34378

University of Vienna, Austria
Postdoc, Faculty of Mathematics, 2018 – 2021
Supervisor: Professor Roland Donninger

EDUCATION

The Ohio State University, USA
Ph.D., Mathematics, 2012 – 2018
Advisor: Professor Ovidiu Costin

University of Sarajevo, Bosnia and Herzegovina
Master's student, Mathematics, 2010 – 2012
Bachelor of Mathematics, with distinction, 2007 – 2010

GRANTS

Austrian Science Fund (FWF)
Project PAT 5825523: Principal investigator, 2024 – 2028, 399,454.13 €
Project P 34378: Principal investigator, 2021 – 2024, 245,353.50 €

HONORS, AWARDS AND FELLOWSHIPS

Presidential Fellowship,
Awarded by the Graduate School, The Ohio State University, 2017.

Phil Huneke Distinguished Graduate Teaching Associate Award, Department of Mathematics, The Ohio State University. *Finalist* 2015. *Runner-up* 2016.

Special Graduate Assignment, Department of Mathematics, The Ohio State University. Fall 2015, Fall 2016 and Spring 2018.

Student of the Generation, University of Sarajevo 2010 (awarded to the best graduating student of the university).

Golden Badge, Faculty of Natural Sciences and Mathematics, University of Sarajevo 2010 (awarded to the best graduating student of the faculty).

Bronze Medal at the 47th International Mathematical Olympiad, Slovenia 2006.

RESEARCH INTERESTS

- Analysis (nonlinear PDEs, harmonic analysis, differential geometry, spectral theory)
- Mathematical physics (general relativity, fluid dynamics)
- Mathematical biology (chemotaxis, aggregation-diffusion equations)

PUBLICATIONS

Research Papers

16. Non-uniqueness of mild solutions to supercritical heat equations. (with M. Hofmanová, T. Lange and E. Luongo) *submitted for publication*, 2025. arXiv:2501.17032

15. Globally stable blowup profile for supercritical wave maps in all dimensions. *Calc. Var. Partial Differential Equations*, 64(2): Paper No. 46, 34 pp, 2025. doi.org/10.1007/s00526-024-02901-7, arXiv:2207.06952

14. Global-in-space stability of singularity formation for Yang-Mills fields in higher dimensions. *J. Differential Equations*, 408:140–165. 2024. doi.org/10.1016/j.jde.2024.06.035, arXiv:2305.10312

13. Existence and stability of shrinkers for the harmonic map heat flow in higher dimensions. (with S. Kistner, and B. Schörkhuber) *Calc. Var. Partial Differential Equations*, 63(4): Paper No. 96, 2024. doi:10.1007/s00526-024-02707-7, arXiv:2304.04104

12. Co-dimension one stable blowup for the quadratic wave equation beyond the light cone. (with P. Chen, R. Donninger, M. McNulty and B. Schörkhuber) *Comm. Math. Phys.*, 405(2):Paper No. 34, 46 pp, 2024. doi:10.1007/s00220-023-04888-2, arXiv:2209.07905

11. On blowup for the supercritical quadratic wave equation. (with E. Csobo and B. Schörkhuber) *Anal. PDE*, 17(2):617–680, 2024. doi:10.2140/apde.2024.17.617, arXiv:2109.11931

10. Stable singularity formation for the Keller-Segel system in three dimensions. (with B. Schörkhuber), *Arch. Ration. Mech. Anal.* 248(4): 2024. doi:10.1007/s00205-023-01947-9, arXiv:2209.11206

9. Stable blowup for the supercritical hyperbolic Yang-Mills equations. *Adv. Math.*, 408: Paper No. 108633, 52 pp, 2022. doi:10.1016/j.aim.2022.108633, arXiv:2104.01839

8. Co-dimension one stable blowup for the supercritical cubic wave equation. (with B. Schörkhuber), *Adv. Math.*, 390: Paper No. 107930, 79 pp, 2021. doi:10.1016/j.aim.2021.107930, arXiv:1810.07681

7. Nonlinear stability of homothetically shrinking Yang-Mills solitons in the equivariant case. (with B. Schörkhuber), *Comm. Partial Differential Equations*, 45(8): 887-912, 2020. doi:10.1080/03605302.2020.1743308, arXiv:1910.03306

6. Strichartz estimates for the one-dimensional wave equation. (with R. Donninger), *Trans. Amer. Math. Soc.*, 373(6): 4051-4083, 2020. doi:10.1090/tran/8075, arXiv:1908.02157

5. Threshold for blowup for the supercritical cubic wave equation. (with M. Maliborski and B. Schörkhuber), *Nonlinearity*, 33(5): 2143-2158, 2020. doi:10.1088/1361-6544/ab6f4d, arXiv:1905.13739

4. On the existence and stability of blowup for wave maps into a negatively curved target. (with R. Donninger), *Anal. PDE*, 12(2): 389-416, 2019. doi:10.2140/apde.2019.12.389, arXiv:1705.06352

3. On blowup of co-rotational wave maps in odd space dimensions. (with A. Chatzikaleas and R. Donninger), *J. Differential Equations.* 263(8): 5090-5119, 2017. doi:10.1016/j.jde.2017.06.011, arXiv:1701.05082

2. Mode stability of self-similar wave maps in higher dimensions. (with O. Costin and R. Donninger), *Comm. Math. Phys.* 351(3): 959-972, 2017. doi:10.1007/s00220-016-2776-7, arXiv:1604.00303

1. On the stability of self-similar solutions to nonlinear wave equations. (with O. Costin, R. Donninger and M. Huang), *Comm. Math. Phys.*, 343(1): 299-310, 2016. doi:10.1007/s00220-016-2588-9, arXiv:1502.06280

Book

Collection of solved problems from mathematical competitions for high school students in the Federation of Bosnia and Herzegovina (1995−2008). (in Bosnian, with Š. Arslanagić), 504 pp. *Grafičar promet*, Sarajevo, 2009.

Conferences & Workshops (on-site)

CY Days in Nonlinear Analysis
Cergy Paris, France — May 2025.

The 14th AIMS Conference on Dynamical Systems
Abu Dhabi, UAE — December 2024.

Deterministic and Probabilistic Dispersive Equations
Bernoulli Center, Lausanne — October 2024.

Nonlinear Waves and Relativity,
Erwin Schrödinger Institute, Vienna — May 2024.

7th Najman conference on Spectral Theory and Diff. Equations,
Brijuni, Croatia — September 2023.

Harmonic Analysis and Partial Differential Equations,
University of Bonn, Germany — May 2023.

Challenges in Spectral Theory of Differential Operators,
Graz University of Technology, Austria — December 2022.

Summer School 2022: Geometric dispersive PDEs,
University Center Obergurgl, Obergurgl, Austria — September 2022.

Recent trends in nonlinear and dispersive equations,
Banach Center, Będlewo, Poland — May 2022.

Austrian Mathematical Society's Conference,
University of Applied Sciences Vorarlberg, Dornbirn, Austria — September 2019.

Mathematics of Wave Phenomena,
Karlsruhe Institute of Technology, Germany — July 2018.

Bosnian Conference on Mathematical Sciences,
University of Sarajevo, Bosnia and Herzegovina — July 2018.

Nonlinear Dirac equations and related problems,
University of Bielefeld, Germany — May 2018.

American Math. Society's Eastern Sectional Meeting,
SUNY Buffalo, New York, USA — September 2017.

Hausdorff Math. School, *Dispersive Eqns., Solitons and Blow-up*,
University of Bonn, Germany September 2017.

Ohio River Analysis Meeting,
University of Cincinnati, USA March 2017.

Asymptotic and comput. aspects of complex diff. equations,
Center for Mathematical Research, Pisa, Italy February 2017.

Summer School in Analysis,
University of Chicago, USA June 2015.

Topics in Euler's equation for incompressible fluids,
University of Notre Dame, South Bend, USA May 2014.

Hyperbolic Geometry and Arithmetic,
University of Sarajevo, Bosnia and Herzegovina October 2010.

Invited Talks

CRC 1283 Seminar, Bielefeld University June 2025.
Physics and Astronomy Seminar, Jagiellonian University, Krakow June 2025.
Analysis and Probability Seminar, Paris Dauphine May 2025.
CY Days in Nonlinear Analysis, Paris Cergy May 2025.

The 14th AIMS Conference, Abu Dhabi, UAE December 2024.
Bernoulli Workshop: Dispersive equations, EPFL, Switzerland October 2024.
CRC 1283 Retreat, Hofgeismar, Germany August 2024.
Nonlinear Waves and Relativity, E. Schrödinger Institute, Vienna May 2024.

Stochastic PDE Seminar, Bielefeld University December 2023.
Oberseminar Analysis, Bielefeld University December 2023.
PDEs and Harm. Analysis Seminar, KAIST, S. Korea (online) November 2023.
Bath Analysis Seminar, University of Bath November 2023.
7th Najman Conference, Brijuni, Croatia September 2023.
London PDE Seminar, University College London June 2023.
Analysis Seminar, EPFL, Lausanne, Switzerland May 2023.
Seminar for Diff. Eqns. and Numer. Anal. University of Zagreb March 2023.

Challenges in Spectral Theory, TU Graz, Austria December 2022.
PDE Seminar, Georgia Institute of Technology, USA (online) November 2022.
Math. Colloquium, University of Massachusetts Lowell, USA (online) Oct. 2022.
Summer School: Geometric dispersive PDEs, Obergurgl, Austria Sep. 2022.
Recent trends in dispersive equations, Będlewo, Poland May 2022.
Young PDEs Mini Symposium, Vienna, Austria April 2022.
Mathematics of Wave Phenomena, Karlsruhe, Germany (online) Feb. 2022.

Analysis and PDEs seminar, Wake Forest University, USA (online) March 2021.
Physics with non-self-adjoint operators, CIRM, Marseille (online) Feb. 2021.

Austrian Math. Society's Conference, Dornbirn, Austria September 2019.
Master Class Math. Physics Seminar, University of Vienna April 2019.

Mathematics of Wave Phenomena (1), Karlsruhe Institute of Techn. July 2018.

Mathematics of Wave Phenomena (2), Karlsruhe Institute of Techn. July 2018.
Bosnian Math. Society's Conference, University of Sarajevo July 2018.
Dirac equations and related problems, University of Bielefeld May 2018.
CRC Seminar, Karlsruhe Institute of Technology April 2018.

AMS Eastern Sectional Meeting, SUNY Buffalo September 2017.
Analysis & Operator theory Seminar, The Ohio State University April 2017.
PDE Seminar, The Ohio State University March 2017.
Math. Graduate Student Seminar, The Ohio State University February 2017.

Scientific Colloquium, Faculty of Science, University of Sarajevo July 2016.

Teaching Experience

Bielefeld University

Lecturer

- Optimization and Dynamics. Summer 2025.

University of Vienna

Problem solving session moderator

- Partial Differential Equations in Mathematical Physics. VDSP Summer School 2021.
- Advanced Partial Differential Equations. Winter 2020.
- Fourier Analysis. Summer 2020.
- Introduction to Analysis. Winter 2019.

The Ohio State University

Teaching Assistant

- Math 1151: Calculus 1. Fall 2012, Spring 2013.
- Math 1152: Calculus 2. Fall 2013, Spring 2015.
- Math 2153: Calculus 3. Spring 2014.
- Math 1131: Business Calculus. Fall 2014
- Math 1172: Engineering Mathematics 1. Spring 2016

University of Sarajevo

Demonstrator (undergraduate teaching assistant)

- Mathematics 1. Fall 2008, Fall 2009. Department of Physics
- Mathematics 2. Spring 2009, Spring 2010. Department of Physics

Other Activities

Analysis Seminar, Faculty of Mathematics, Bielefeld University.
Co-organizer, 2025 -

Colloquium Committee, Department of Mathematics, The Ohio State University.
Member, 2017 - 2018

Students for Dialogue - student organization, The Ohio State University.
President, 2015 - 2017

Council of Graduate Studies, Department of Mathematics, The Ohio State University. *Student Representative*, 2015 - 2016

References

Professor Roland Donninger
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(for teaching)
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