

Sinem Onaran

CURRICULUM VITAE

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RESEARCH INTERESTS

Low-Dimensional Topology, Contact Topology, Knot Theory, Lefschetz Fibrations on 4-Manifolds

EDUCATION

- Ph.D. in Mathematics**, Middle East Technical University July 2009
Thesis Advisors: John B. Etnyre, Georgia Institute of Technology
Mustafa Korkmaz, Middle East Technical University
Thesis: *"Legendrian Knots and Open Book Decompositions"*
- Visiting Graduate Student**, Georgia Institute of Technology August 2007 - May 2009
Host: John B. Etnyre
- M.S in Mathematics**, Middle East Technical University June 2006
Thesis Advisor: Mustafa Korkmaz, Middle East Technical University
Thesis: *"Contact Surgery on Contact 3-manifolds"*
- B.S. in Mathematics**, Middle East Technical University June 2003
- Minor Program in Industrial Design**, Middle East Technical University June 2003

APPOINTMENTS

- Professor, Hacettepe University November 2021 – present
- Research Visitor, Max-Planck Institute for Mathematics, Germany February 2024 – April 2024
- Fulbright Visiting Scholar, Miami University August 2022 – July 2023
- Associate Professor, Hacettepe University October 2015 – November 2021
- Assistant Professor, Hacettepe University November 2012 – October 2015
- Research Visitor, Max-Planck Institute for Mathematics, Germany August 2013 – September 2013
- Lecturer of Geometry, Hacettepe University September 2011 – October 2012
- Assistant Professor/ Postdoc, University of Waterloo, Canada September 2010 – August 2011
- Postdoctoral Researcher, Boğaziçi University, Turkey February 2010 – September 2010
- Oberwolfach Leibniz Fellowship, MFO Germany October 2009 – January 2010
- Research Visitor, University of Cologne, Germany November 2009
Host: Hansjörg Geiges

PUBLICATIONS

1. *Invariants of Legendrian Knots from Open Book Decompositions*, International Mathematics Research Notices **2010**(10) (2010), 1831–1859.
2. *On Sections of Genus two Lefschetz Fibrations*, Pacific Journal of Mathematics **248**(1) (2010), 203–216.
3. *Planar Open Book Decompositions of 3-manifolds*, Rocky Mountain Journal of Mathematics **44**(5) (2014), 1621–1630.
4. *Legendrian Rational Unknots*, joint with H. Geiges, Journal of Symplectic Geometry **13**(1) (2015), 17–50.
5. *Non-looseness of Non-loose knots*, joint with K. L. Baker, Algebraic & Geometric Topology **15**(2) (2015), 1031–1066.
6. *Legendrian Lens Space Surgeries*, joint with H. Geiges, Michigan Mathematical Journal **67**(2) (2018), 405–422.
7. *Legendrian Torus Knots in Lens Spaces*, Turkish Journal of Mathematics **42**(3) (2018), 936–948.
8. *On Overtwisted Contact Surgeries*, Bulletin of the Australian Mathematical Society **98** (2018), 144–148.
9. *From Automorphisms of Riemann Surfaces to Smooth 4-manifolds*, joint with A. Beyaz, P. Naylor, and B. D. Park, Mathematical Research Letters, **27**(3) (2020), 629–645.
10. *Exceptional Legendrian Torus Knots*, joint with H. Geiges, International Mathematics Research Notices, **2020** (22) (2020), 8786–8817.
11. *Legendrian Hopf Links*, joint with H. Geiges, the Quarterly Journal of Mathematics, **71**(4) (2020), 1419–1459.
12. *On the Support Genus of Legendrian Knots*, Archiv der Mathematik, **116**(4) (2021), 469–479.
13. *L-space knots with tunnel number > 1 by experiment*, joint with C. Anderson, K. L. Baker, X. Gao, M. Kegel, K. Le, K. Miller, G. Sangston, S. Tripp, A. Wood, A. Wright, Experimental Mathematics, <https://doi.org/10.1080/10586458.2021.1980753>.
14. *Legendrian Knots in Contact 3-Manifolds*, Extended Abstracts GEOMVAP 2019, (2021), 43–47.
15. *Minimal Number of Singular Fibers in a Nonorientable Lefschetz Fibration*, joint with B. Ozbagci, Geometriae Dedicata, (2022), 216, 4.
16. *Contact Surgery Graphs*, joint with M. Kegel, Bulletin of the Australian Mathematical Society, (2022), <https://doi.org/10.1017/S0004972722000375>.
17. *Real Tight Contact Structures on Lens Spaces and Surface Singularities*, joint with F. Öztürk, Journal of Topology and Analysis, (2023), <https://doi.org/10.1142/S1793525323500139>.
18. *Contact Surgery Numbers*, joint with J. B. Etnyre, M. Kegel, Journal of Symplectic Geometry, Vol. 21 **(6)** (2023), 1255–1333.
19. *Strongly exceptional Legendrian connected sum of two Hopf links*, joint with Y. Li, to appear in the Canadian Journal of Mathematics.
20. *Non-looseness of boundaries of Legendrian ribbons*, joint with K.L. Baker, (2023) submitted, arXiv:2307.06828.
21. *Legendrian Hopf Links in $L(p, 1)$* , joint with R. Chatterjee, H. Geieges, (2024) submitted, arxiv:409.02582.

AWARDS, GRANTS AND SCHOLARSHIPS

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|---|----------------------------|
| • Max–Planck Institute for Mathematics Research Grant, Germany | February 2024 – April 2024 |
| • Fulbright Visiting Scholar, Turkish Fulbright Commission | 2022 – 2023 |
| • TÜBİTAK 2219 International Research Fellowship Programme | 2023 |
| • Hacettepe Scientific Research Projects Coordination Unit Project Grant
Title: "Contact Topology in dimension 3" (PI) | 2022 – 2023 |
| • ODTÜ M. Parlar Foundation Research Encouragement Award | 2020 |
| • BAGEP-Young Scientist Award, The Science Academy, Turkey | 2020 |

- TÜBİTAK 1001 Scientific and Technological Research Projects Grant 2020 – 2023
Title: "*Contact Topology in dimension 3*" (PI)
- Masatoshi Gündüz İKEDA Research Award, Mathematics Foundation of Turkey 2017
- TÜBA-GEBİP Outstanding Young Scientist Award, Turkish Academy of Sciences 2016
- TÜBİTAK 1001 Scientific and Technological Research Projects Grant 2016 – 2019
Title: "*Contact Surgeries in Contact Topology*" (PI)
- Hacettepe Scientific Research Projects Coordination Unit Project Grant 2014
Title: "*Contact Topology Workshop*" (PI)
- TÜBİTAK 3501 National Young Researchers Career Grant 2013 – 2015
Title: "*Knots and Overtwisted Contact Manifolds*" (PI)
- Hacettepe Scientific Research Projects Coordination Unit Project Grant 2013 – 2014
Title: "*Surface Involutions and Surface Bundles*" (PI)
- Max-Planck Institute for Mathematics Research Grant, Germany August 2013 – September 2013
- TÜBİTAK 1001 Postdoctoral Scholar May 2010 – September 2010
provided by TÜBİTAK 1001 grant 109T671 to Ferit Öztürk
- Oberwolfach Leibniz Fellow, MFO Germany October 2009 – January 2010
- Partial Support to visit Georgia Tech September 2008 – May 2009
provided by NSF grant DMS-0804820 to John B. Etnyre
- TÜBİTAK 2214 Ph.D. Research Scholarship to visit Georgia Tech August 2007 – May 2008
- TÜBİTAK 2211 Ph.D. Scholarship March 2006 – August 2007

ORGANIZATIONAL

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- Co-organizer: Geometry & Topology Workshop Turkey, (On-line) November 27, 2020/
January 29, 2021/ March 26, 2021
 - Organizer: Lefschetz Fibrations Day Workshop, Hacettepe University January 10, 2020
 - Organizer: Contact Topology Workshop, Hacettepe University March 22, 2019
 - Co-organizer: Geometry/ Topology Working Days I – VI Spring& Fall 2016
Atılım University, Hacettepe University
 - Organizer: Workshop on Contact Topology, Hacettepe University October 25, 2014
 - Co-organizer: General Seminars, Hacettepe University Spring 2013
 - Organizer: Workshop on Low Dimensional Topology, Hacettepe University March 1, 2013
 - Co-organizer: İstanbul Contact Geometry and Topology Workshop, IMBM June 7 - 10, 2010

STUDENT SUPERVISION

PhD Students

- Saliha Kıvanç, Hacettepe University Current

Masters Students

- Emre Can Erdem, Hacettepe University Current
- Sercan Ay, Hacettepe University June 2022
- İrem Özge Saraç, Hacettepe University July 2018
- Yasemin Yıldırım, Hacettepe University July 2018
- Berna Pekavcılar, Hacettepe University September 2017
- Samet Sarıoğlan, Hacettepe University September 2014

TEACHING EXPERIENCE

Instructor

- Engineering Math, Art and Math Fall 2024
- Research Visit, Max–Planck Institute for Mathematics, Germany Spring 2024
- Engineering Math, Origami and Math, Art and Math Fall 2023
- Sabbatical Leave, Miami University, USA Fall 2022–Spring 2023
- Topics in Topology II (Graduate), Origami and Math, Art and Math Spring 2022
- Topics in Topology I (Graduate), Origami and Math, Art and Math Fall 2021
- Topology of 4-manifolds (Graduate), Origami and Math Spring 2021
- Geometric Topology (Graduate), Engineering Math I, Origami and Math Fall 2020
- Algebraic Topology I (Graduate), Origami and Math, Art and Math Spring 2020
- Elementary Knot Theory, Engineering Math I, Origami and Math, Art and Math Fall 2019
- Geometric Topology (Graduate), Engineering Math, Origami and Math, Art and Math Spring 2019
- Elementary Knot Theory, Engineering Math I, Origami and Math, Art and Math Fall 2018
- Engineering Math II, Mathematics II, Art and Math Spring 2018
- Geometric Topology (Graduate), Engineering Math I, Mathematics I, Origami and Math Fall 2017
- Intro. to Geometric Topology, Origami and Math, Art and Math Spring 2017
- Elementary Knot Theory, Origami and Math, Art and Math Fall 2016
- Intro. to Geometric Topology, Algebraic Topology I (Graduate), Origami and Math, Mathematics II Spring 2016
- Topology of 3–manifolds (Graduate), Elementary Knot Theory, Origami and Math Fall 2015
- Topology of 4–manifolds (Graduate), Algebraic Topology II (Graduate), Origami and Math, Mathematics I Spring 2015
- Topology of 3–manifolds (Graduate) Fall 2014
- Topics in Topology – Contact Topology (Graduate), Algebraic Topology I (Graduate), Mathematics I Fall 2013
- Algebraic Topology II (Graduate), Mathematics I, Mathematics II Spring 2013
- Calculus I, Advanced Mathematics I, University of Waterloo Fall 2010 – Spring 2011
- Knots, Links and Topology of 3–manifolds (Graduate), Boğaziçi University Spring 2010
- Differential Equations, Middle East Technical University Summer 2009

Teaching Assistant

- Calculus I–II, Middle East Technical University Fall 2006 – Spring 2007
- Calculus I–II, Başkent University Fall 2005 – Spring 2006
- Differential Geometry, Middle East Technical University Spring 2004
- Basic Algebraic Structures, Middle East Technical University Fall 2004

Other

- Teaching Development Program Certificate by Centre for Teaching Excellence University of Waterloo Fall 2004

INVITED TALKS

1. ICERM Providence – Braids in Low-Dimensional Topology Workshop April 2022
2. METU – Workshop on Curves, Mapping Class Groups and their Applications January 2020
3. University of Cologne – Seminar on Symplectic and Contact Geometry October 2019
4. CRM Barcelona – Women in Geometry and Topology (contributed talk) September 2019
5. Russia – Caucasian Mathematics Conference (CMC III, Young invited speaker) August 2019
6. Ankara–Istanbul Algebraic Geometry & Number Theory Meetings, Three Lecture Series Spring 2019
7. METU – Third METU Math Club Workshop February 2019
8. Georgia Tech Atlanta USA – Tech Topology Conference (lighting talk) December 2018
9. ETH Zurich – Women in Geometry and Topology (contributed talk) June 2017
10. Boğaziçi University – Mathematics Colloquium April 2017
11. Ankara University – Mathematics Colloquium November 2016
12. University of Cologne – Symplectic Techniques in Topology & Dynamics Workshop August 2015
13. Antalya University – 28th National Mathematics Symposium (Main speaker) September 2015
14. Oklahoma State University – Redbud Topology Conference April 2015
15. Lorentz Center – Rigidity and Flexibility in Symplectic Topology & Dynamics Workshop July 2014
16. Atılım University – Ninth Ankara Mathematics Days June 2014
17. Çankaya University – Eight Ankara Mathematics Days June 2013
18. Koç University – Mathematics Seminars December 2012
19. Mimar Sinan Fine Arts University – General Seminars December 2012
20. Bilkent University – Geometry Topology Summer School, Turkish Women in Maths August 2012
21. Bilkent University – Seventh Ankara Mathematics Days June 2012
22. Institute for Advanced Study, Princeton – Women & Maths: 21st Century Geometry May 2012
23. Fields Institute, Toronto – Conference on Connections in Geom. and Physics GAP 2011 May 2011
24. University of Waterloo – Pure Math Department Colloquia February 2011
25. University of Buffalo – Geometry & Topology Seminars January 2011
26. McMaster University – Geometry & Topology Seminars December 2010
27. University of Waterloo – Geometry & Topology Seminars September 2010
28. Boğaziçi University – Mathematics Colloquium May 2010
29. Atılım University – Department of Mathematics General Seminar April 2010
30. University of Minnesota – Differential Geometry & Symplectic Topology Seminar March 2010
31. Bilgi University – Weekly Seminars February 2010
32. MSRI Berkeley – Connections for Women: Homology Theo. of Knots and Links January 2010
33. University of Cologne – Arbeitsgemeinschaft Symplektische Topologie November 2009
34. University of Cologne – Brussels-Cologne Seminar on Symplectic and Contact Geo. October 2009
35. Koç University – Geometry & Topology Seminars June 2009
36. Forth Ankara Mathematics Days – Middle East Technical University June 2009
37. University of Georgia, Athens – Topology Seminar April 2009
38. Georgia Institute of Technology – Geometry Topology Seminar March 2009
39. Georgia Institute of Technology – Research Horizons February 2009
40. Middle East Technical University – Geometry Topology Seminar December 2008
41. Georgia Institute of Technology – Geometry Topology Working Seminar October 2008

REFEREE

- Algebraic & Geometric Topology, Michigan Mathematical Journal, Pacific Journal of Mathematics, Turkish Journal of Mathematics, Expositiones Mathematicae, Glasgow Mathematical Journal, Journal of Topology and its applications, Journal of Gökova Geometry Topology, International Mathematics Research Notices, Hacettepe Journal of Mathematics, Houston Journal of Mathematics

PROFESSIONAL MEMBERSHIPS

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|---|-------|
| • Turkish Mathematical Society (TMD) | 2009– |
| • Association for Turkish Women in Mathematics (TKMD) | 2012– |
| • European Women in Mathematics (EWM) | 2018– |

BOOK/ YOUTUBE

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| • Published Book: Matematiksel Mandala (Mandala coloring book)
Book of Art and Math class
Instagram: @matematikselmandala
https://www.sinemonaran.com/matematiksel-mandala | 2021 |
| • Online Book: Math with Origami (in Turkish)
Available at Google Books | 2022 |
| • Youtube: MathsofOrigami
Youtube of Origami and Math class
Instagram: @mathsoforigami
https://www.youtube.com/channel/UCb5qGEZCmKjdarN8A21DXDw | 2020 |