Date: July 12, 2020

Resumé

1. PERSONAL DETAILS

Full name: Oded Amir

Identity No.: 3193274-2

Date and place of birth: 27/09/1974, Jerusalem, Israel

Marital status: Married, 4 children

Phone number: +972-4-8293041

Email: odedamir@technion.ac.il

Webpage: http://structopt.net.technion.ac.il/people/oded-amir/

2. ACADEMIC DEGREES

- Ph.D., 2011, Department of Mathematics, Technical University of Denmark.
- M.Sc. (with honor), 2007, Faculty of Civil and Environmental Engineering, Technion – Israel Institute of Technology.
- B.Sc. (with highest honor), 2003, Faculty of Civil and Environmental Engineering, Technion – Israel Institute of Technology.

3. ACADEMIC APPOINTMENTS

- 2019–present: Associate Professor, Faculty of Civil and Environmental Engineering, Technion – Israel Institute of Technology.
- 2018: Visiting Assistant Professor, Department of Structural Engineering, University of California San Diego.
- 2017–2018: Visiting Scholar, Department of Structural Engineering, University of California San Diego.
- 2013–2019: Assistant Professor, Faculty of Civil and Environmental Engineering, Technion – Israel Institute of Technology.
- 2012–2013: Lecturer, Faculty of Civil and Environmental Engineering, Technion – Israel Institute of Technology.
- 2011–2012: Post doctoral researcher, Department of Mechanical Engineering, Technical University of Denmark.

4. PROFESSIONAL EXPERIENCE

- 2017–2019: Software development consultant, Paramatters LTD.
- 2003–2004, 2007: Structural engineer, Kedmor Engineers LTD.

5. RESEARCH INTERESTS

- Structural optimization.
- Topology optimization.
- Efficient computational procedures for topology optimization.
- Topology optimization for concrete structures.
- Topology optimization for additive manufacturing.
- Digital architectural design.

6. TEACHING EXPERIENCE

- "Statics of Structures", undergraduate, Technion: 2012–2016, 2019.
- "Structural Optimization", graduate, Technion: 2012–2017, 2019–2020.
- "Principles of Structural Design", undergraduate, Technion: 2013.
- "Computer Methods in Statics of Structures", undergraduate, Technion: 2014.
- "Design-Oriented Analysis of Structures", graduate, Technion: 2016 (by guided reading).
- "Structural Analysis II", undergraduate, UC San Diego: 2018.
- "Prestressed concrete", joint undergraduate/graduate, Technion: 2019.

7. TECHNION ACTIVITIES

- Judge (Senior Lecturer level) at the disciplinary court of the academic staff, 2017–2021.

8. DEPARTMENTAL ACTIVITIES

- Head of program in "Structural Engineering", 2019–.

9. PUBLIC PROFESSIONAL ACTIVITIES

2019–present: Associate editor, ASCE Journal of Structural Engineering.

Reviewer for international journals:

- Advances in Engineering Software.
- Architectural Science Review.
- ASCE Journal of Engineering Mechanics.
- ASCE Journal of Structural Engineering.
- ASME Journal of Mechanical Design.
- Composites Part B.
- Computer-Aided Design.
- Computer Methods in Applied Mechanics and Engineering.
- Computers and Concrete.

- International Journal for Numerical Methods in Engineering.
- International Journal of Heat and Mass Transfer.
- International Journal of Material Forming.
- Journal of Automation in Construction.
- Journal of Building Engineering.
- Journal of Computational Physics.
- Journal of Sound and Vibration.
- Mechanics Based Design of Structures and Machines.
- Optimization and Engineering.
- Soil Dynamics and Earthquake Engineering.
- Structural and Multidisciplinary Optimization.

Reviewer of research proposals:

- The Research Foundation – Flanders (FWO), 1 proposal.
- The Israel Science Foundation (ISF), 1 proposal.
- The Netherlands Organization for Scientific Research (NWO), 1 proposal.
- Israel Ministry of Science and Technology (MOST), 1 proposal.

Reviewer of book proposals:

- Elsevier Global Book Production, 1 proposal.

Service in Ph.D. committees:

- Deepak K. Gupta, TU Delft (oral exam, April 2019). Supervisors: M. Langelaar and A. van Keulen.
- Jef Rombouts, KU Leuven and Vrije Universitet Brussel (oral exam, June 2019). Supervisors: M. Schevenels, G. Lombaert and L. De Laet.
- Teemu Tianien, Tampere University (written pre-exam evaluation, October 2019). Supervisors: K. Mela, M. Heinisuo.

10. MEMBERSHIP IN PROFESSIONAL SOCIETIES

- 2009–present: Member of ISSMO – International Society for Structural and Multidisciplinary Optimization.
- 2019–present: Member of ASCE – American Society of Civil Engineers.

11. FELLOWSHIPS, AWARDS and HONORS

- 2002, Miriam and Abraham Berzowsky (Livne) Award for highest grade in "Fundamentals of Transportation Engineering", undergraduate studies.
- 2003, B.Sc. Summa Cum Laude.
- 2005, Vivian Konigsberg Award for Excellence in Teaching.

- 2006, Langat Development Award for outstanding teaching assistant.
- 2006, Vivian Konigsberg Award for Excellence in Teaching.
- 2006, Sandor Szego Award for Excellence in Teaching.
- 2007, Vivian Konigsberg Award for Excellence in Teaching.
- 2007, Sandor Szego Award for Excellence in Teaching.
- 2007, M.Sc. Cum Laude.
- 2014, A. Arenson Award for Excellence in Teaching.
- 2015, A. Arenson Award for Excellence in Teaching.
- 2016, Yanai Prize for Excellence in Academic Education (100,000 NIS, apprx. 27,500 USD). Link to Technion press release
- 2017, Henri Gutwirth Research Grant.

12. GRADUATE STUDENTS

Completed Ph.D. theses

1. Nicolo Pollini (co-supervisor, main supervisor Oren Lavan), 2018. Title: "Optimization Based Approach for a Realistic Minimum-cost Seismic Design of Frames with Viscous Dampers".
2. Hazem Madah (sole supervisor), 2018. Title: "Optimal Design of Skeletal Structures with Geometric Nonlinearity".
3. Yoram Mass (sole supervisor), 2019. Title: "Reducing Support Material in Additive Manufacturing of Structures Designed by Topology Optimization".

Completed M.Sc. theses

1. Liron Reuveny (adviser, supervisors Anath Fischer and Pinhas Bar-Yoseph, Mechanical Engineering), 2016. Title: "Design of 2-D Porous Micro Structures by Using Geometric Meshing, Finite Element Analysis (FEA) and Topology Optimization".
2. Elad Katriel (co-supervisor, main supervisor Oren Lavan), 2017. Title: "Optimal Seismic Retrofit of 2D RC Frames with Masonry Infill Using Various Technologies".
3. Yohay Amoyal (sole supervisor), 2018. Title: "Investigating the Potential of Reducing the Weight of Ribbed Concrete Plates Using Structural Optimization".
4. Emad Shakour (sole supervisor), 2018. Title: "Topology Optimization of Reinforced Concrete Elements Using Continuum Damage Models".
5. Yosef Yoely (main supervisor, co-supervisor Iddo Hanniel, Mechanical Engineering), 2018. Title: "Spline-based Topological Optimization with Curvature Constraints".
6. Yakov Zelickman (sole supervisor), 2018. Title: "Topology Optimization with Stress Constraints Using Material Nonlinearity".
7. Matti Spicer (sole supervisor), 2019. Title: "Efficient Reanalysis Procedures for Topology Optimization with Geometric Nonlinearities".

Ph.D. theses in progress

1. Eilam Amir (sole supervisor), 10/15–9/19. Title: "Structural Optimization of Highly Refined Energy Absorbing Structures for Fabrication by Additive Manufacturing".

2. Lior Nahum (co-supervisor, main supervisor Alva Peled), 11/15–10/19, Ben-Gurion University . Title: "Optimization for Reducing the Embodied Energy in Spanning Structural Concrete Elements".

3. Emad Shakour (sole supervisor), 10/17–3/21. Title: "Optimization of 3-D Porous Structures Using Iso Geometric Analysis".

4. Michael Weizmann (co-supervisor, main supervisor Yasha Grobman, Architecture), 10/16–9/20. Title: "Structural Systems Based on Topological Interlocking Units".

5. Yakov Zelickman (sole supervisor), 10/17–3/21. Title: "Combined Optimization of Lateral and Vertical Load-bearing Structural Systems in High-rise Buildings".

M.Sc. theses in progress

1. Moshe Ankri (co-supervisor, main supervisor Pinhas Bar-Yoseph, Mechanical Engineering), 10/18–9/22. Title: "Topology Optimization with Length Scale as a Design Variable".

2. Raneen Hassan (sole supervisor), 3/20–2/22.

3. Majd Kosta (main supervisor, co-supervisor Gal Shmuel, Mechanical Engineering), 10/19–9/21. Title: "Topology Optimization for Maximizing Electro-Momentum Coupling in Piezoelectric Composites".

4. Ofer Litvin (sole supervisor), 10/18–9/20. Title: "Analysis and Optimization of Topological Interlocking Systems".

5. Ahmad Majdouba (sole supervisor), 3/20–2/22.

6. Adaya Shaked (sole supervisor), 10/19–9/21.

13. SPONSORED LONG-TERM VISITORS AND POST-DOCTORAL ASSOCIATES

1. Atul Kumar Sharma, 5/19–4/20 (in collaboration with Gal Shmuel, Mechanical Engineering).

14. RESEARCH GRANTS

Competitive

1. 2011–2013, The Danish Council for Independent Research | Technology and Production Sciences, total 1,576,800 Danish Krone (200,000 EUR), Individual postdoctoral grant.

2. 2013–2017, Marie Curie Career Integration Grant (CIG), total 100,000 EUR.

3. 2015–2018, ISF, total 371,000 NIS (89,000 EUR), Individual Research Grant.

4. 2015–2018, Research Grant from the Ministry of Science, Technology and Space, total 167,015 NIS (38,306 EUR). In collaboration with Oren Lavan.

5. 2019–2022, Research Grant from the Ministry of Science, Technology and Space, total 500,000 NIS (115,000 EUR). In collaboration with Gal Shmuel (Mechanical Engineering, Technion).

Industrial and other sources

1. 2009–2010, Hamtofts Mindelegat travel grant, total 37,264 Danish Krone (5,000 EUR).
2. 2015–2018, Israel Innovation Authority (MAGNET program), member of AATiD Consortium: Development of Advanced Technologies for Three-Dimensional Printing of Titanium. total 300,000 NIS (72,640 EUR).
3. 2018–2023, Erasmus Mobility Grant, collaboration with Lund University (Prof. Mathias Wallin), Sweden.
4. 2019–2021, Ministry of Construction and Housing, total 162,127 NIS.

15. PUBLICATIONS

Theses

1. "Nonlinear Analysis and Reanalysis of Structures Using Combined Approximations", M.Sc. thesis, Faculty of Civil and Environmental Engineering, Technion – Israel Institute of Technology, Haifa, Israel, 2007.
2. "Efficient Reanalysis Procedures in Structural Topology Optimization", Ph.D. thesis, Department of Mathematics, Technical University of Denmark, Kgs. Lyngby, Denmark, 2011.

Refereed papers in professional journals

Published

1. **Amir O**, Kirsch U and Sheinman I. Efficient non-linear reanalysis of skeletal structures using combined approximations. *International Journal for Numerical Methods in Engineering* 2008, 73:1328-1346.
2. **Amir O**, Bendsøe MP and Sigmund O. Approximate reanalysis in topology optimization. *International Journal for Numerical Methods in Engineering* 2009, 78:1474-1491.
3. **Amir O**, Stolpe M and Sigmund O. Efficient use of iterative solvers in nested topology optimization. *Structural and Multidisciplinary Optimization* 2010, 42:55-72.
4. **Amir O** and Sigmund O. On reducing computational effort in topology optimization: how far can we go? *Structural and Multidisciplinary Optimization* 2011, 44:25-29.
5. Bogomolny M and **Amir O**. Conceptual design of reinforced concrete structures using topology optimization with elasto-plastic material modeling. *International Journal for Numerical Methods in Engineering* 2012, 90:1578-1597.
6. **Amir O**, Sigmund O, Schevenels M and Lazarov BS. Efficient reanalysis techniques for robust topology optimization. *Computer Methods in Applied Mechanics and Engineering* 2012, 245-246:217-231.
7. **Amir O** and Sigmund O. Reinforcement layout design for concrete structures based on continuum damage and truss topology optimization. *Structural and Multidisciplinary Optimization* 2013, 47:157-174.
8. **Amir O**. A topology optimization procedure for reinforced concrete structures. *Computers and Structures* 2013, 114-115:46-58.
9. **Amir O**, Aage N and Lazarov BS. On multigrid-CG for efficient topology optimization. *Structural and Multidisciplinary Optimization* 2014, 49:815-829.

10. Lavan O and **Amir O**. Simultaneous topology and sizing optimization of viscous dampers in seismic retrofitting of 3D irregular frame structures. *Earthquake Engineering and Structural Dynamics* 2014, 43(9):1325-1342.
11. **Amir O**. Revisiting approximate reanalysis in topology optimization: On the advantages of recycled preconditioning in a minimum weight procedure. *Structural and Multidisciplinary Optimization* 2015, 51:41-57.
12. **Amir O** and Elishakoff I. Intricate interrelation between robustness and probability in the context of structural optimization. *ASCE-ASME Journal of Risk and Uncertainty in Engineering Systems, Part B: Mechanical Engineering* 2015, 1(3):031003.
13. Pollini N, Lavan O and **Amir O**. Towards realistic minimum-cost optimization of viscous fluid dampers for seismic retrofitting. *Bulletin of Earthquake Engineering* 2016, 14(3):971-998.
14. Weizmann M, **Amir O** and Grobman YJ. Topological interlocking in buildings: A case for the design and construction of floors. *Automation in Construction* 2016, 72:18-25.
15. **Amir O**. Stress constrained continuum topology optimization: a new approach based on elasto-plasticity. *Structural and Multidisciplinary Optimization* 2017, 55(5):1797-1818.
16. Pollini N, Lavan O and **Amir O**. Minimum-cost optimization of nonlinear fluid viscous dampers and their supporting members for seismic retrofitting. *Earthquake Engineering and Structural Dynamics* 2017, 46(12):1941-1961.
17. Weizmann M, **Amir O** and Grobman YJ. Topological interlocking in architecture: a new design method and computational tool for designing building floors. *International Journal of Architectural Computing* 2017, 15(2):107-118.
18. Madah H and **Amir O**. Truss optimization with buckling considerations using geometrically nonlinear beam modeling. *Computers and Structures* 2017, 192:233-247.
19. Mass Y and **Amir O**. Topology optimization for additive manufacturing: accounting for overhang limitations using a virtual skeleton. *Additive Manufacturing* 2017, 18:58-73.
20. **Amir O** and Mass Y. Topology optimization for staged construction. *Structural and Multidisciplinary Optimization* 2018, 57(4):1679–1694.
21. **Amir O** and Shakour E. Simultaneous shape and topology optimization of prestressed concrete beams. *Structural and Multidisciplinary Optimization* 2018, 57(5):1831-1843.
22. Pollini N, Lavan O and **Amir O**. Adjoint sensitivity analysis and optimization of hysteretic dynamic systems with nonlinear viscous dampers. *Structural and Multidisciplinary Optimization* 2018, 57(6):2273-2289.
23. Bortot E, **Amir O** and Shmuel G. Topology optimization of dielectric elastomers for wide tunable band gaps. *International Journal of Solids and Structures* 2018, 143:262-273.
24. **Amir O** and Lazarov BS. Achieving stress-constrained topological design via length scale control. *Structural and Multidisciplinary Optimization* 2018, 58(5):2053-2071.
25. Mass Y and **Amir O**. Using a virtual skeleton to increase printability of topology optimized design for industry-class applications. *Comptes Rendus Mécanique* 2018, 346(11):1104:1121.
26. Amir E and **Amir O**. Topology optimization for the computationally poor: efficient high resolution procedures using beam modeling. *Structural and Multidisciplinary Optimization* 2019, 59(1):165-184.
27. Pollini N, Lavan O and **Amir O**. Optimization-based minimum-cost seismic retrofitting of hysteretic frames with nonlinear fluid viscous dampers. *Earthquake Engineering and Structural Dynamics* 2018, 47(15):2985-3005.
28. Madah H and **Amir O**. Concurrent structural optimization of buckling-resistant trusses and their initial imperfections. *International Journal of Solids and Structures* 2019, 162:244-258.

29. Pollini N and **Amir O**. Mixed projection- and density-based topology optimization with applications to structural assemblies. *Structural and Multidisciplinary Optimization* 2020, 61:687-710.
30. Chung H, **Amir O** and Kim HA. Level-set topology optimization considering nonlinear thermoelasticity. *Computer Methods in Applied Mechanics and Engineering* 2020, 361:112735.
31. Vantyghem G, De Corte W, Shakour E and **Amir O**. Topology optimization and 3D printing of a post-tensioned concrete girder. *Automation in Construction* 2020, 112:103084.
32. Wallin M, Ivarsson N, **Amir O** and Tortorelli D. Consistent boundary conditions for PDE filter regularization in topology optimization. *Structural and Multidisciplinary Optimization*, online.

Submitted

1. Amir E and **Amir O**. Concurrent high-resolution topology optimization of structures and their supports for additive manufacturing.
2. Yoely Y, Hanniel I and **Amir O**. Structural optimization with explicit geometric constraints using a B-spline representation.
3. Zelickman Y and **Amir O**. Layout optimization of post-tensioned cables in concrete slabs.
4. Shakour E and **Amir O**. Topology optimization with precise evolving boundaries based on IGA and untrimming techniques.
5. **Amir O**. Efficient stress-constrained topology optimization using inexact design sensitivities.

Chapters in books

1. Aage N, **Amir O**, Clausen A, Hadar L, Maier D and Søndergaard A. Advanced Topology Optimization Methods for Conceptual Architectural Design. *Advances in Architectural Geometry 2014*, Springer International Publishing, 2015, 159-179.
2. Søndergaard A, **Amir O**, Eversmann P, Piskorec L, Stan F, Gramazio F and Kohler M. Topology optimization and robotic fabrication of advanced timber space-frame structures. *Robotic Fabrication in Architecture, Art and Design 2016*. Springer International Publishing, 2016, 190-203.
3. Madah H and **Amir O**. Optimal design of skeletal structures exhibiting nonlinear response. In: Schumacher A., Vietor T., Fiebig S., Bletzinger KU., Maute K. (eds) Advances in Structural and Multidisciplinary Optimization – WCSMO 2017. Springer, Cham.
4. Zelickman Y and **Amir O**. Topology optimization with stress constraints using isotropic damage with strain softening. In: Schumacher A., Vietor T., Fiebig S., Bletzinger KU., Maute K. (eds) Advances in Structural and Multidisciplinary Optimization – WCSMO 2017. Springer, Cham.

Refereed papers in conference proceedings

1. **Amir O**, Stolpe M and Sigmund O. Efficient use of iterative solvers in nested topology optimization. Presentation and full conference paper in proceedings: World Congress for Structural and Multidisciplinary Optimization WCSMO-8; Lisbon, Portugal, June 2009.
2. **Amir O** and Bogomolny M. Topology optimization for conceptual design of reinforced concrete structures. Presentation and full conference paper in proceedings: World Congress for Structural and Multidisciplinary Optimization WCSMO-9; Shizuoka, Japan, June 2011.
3. **Amir O**. Topology optimization procedures for reinforced concrete design. Presentation and full conference paper in proceedings: *fib* Symposium; Tel-Aviv, Israel, April 2013.

4. Søndergaard A, **Amir O** and Knauss M. Topology optimization and digital assembly of advanced space-frame structures. Full conference paper in proceedings: ACADIA 2013 - Adaptive Architecture; Ontario, Canada, October 2013.
5. Pollini N, Lavan O and **Amir O**. Towards realistic minimum-cost seismic retrofitting of 3D irregular frames using viscous dampers of a limited number of size groups. Poster presentation and full conference paper in proceedings: 15th European Conference on Earthquake Engineering; Istanbul, Turkey, August 2014.
6. Weizmann M, **Amir O** and Grobman YJ. Topological interlocking in architectural design. In: Y. Ikeda, C. M. Herr, D. Holzer, S. Kaijima, M. J. Kim. M, A, Schnabel (eds.), *Emerging Experience in Past, Present and Future of Digital Architecture*, Proceedings of the 20th International Conference of the Association for Computer-Aided Architectural Design Research in Asia CAADRIA 2015.
7. Pollini N, Lavan O and **Amir O**. Minimum-cost optimal design of nonlinear fluid viscous dampers and their supporting braces for seismic retrofitting. 16th World Conference on Earthquake Engineering; Santiago, Chile, January 2017.
8. Pollini N, Lavan O and **Amir O**. Topology and sizing optimization of nonlinear viscous dampers for the minimum-cost seismic retrofitting of 3-D frame structures. Structures Congress 2017; Denver, USA, April 2017.
9. Yoely Y, **Amir O** and Hanniel I. Topology and shape optimization with explicit geometric constraints using a spline-based representation and a fixed grid. *Procedia Manufacturing* 2018, 21, 189-196.
10. Yoely Y, Hanniel I and **Amir O**. Spline-based structural optimization with explicit geometric constraints using a fixed grid. Presentation and full conference paper in proceedings: 58th Israel Annual Conference on Aerospace Sciences.
11. **Amir O** and Shakour E. Topology optimization of post-tensioned concrete beams. Presentation and full conference paper in proceedings: IASS 2018 – Creativity in Structural Design; Boston, USA, July 2018.
12. Madah H and **Amir O**. Structural optimization of trusses and frames with buckling considerations and worst-case imperfections. Presentation and full conference paper in proceedings: IASS 2018 – Creativity in Structural Design; Boston, USA, July 2018.
13. Chung H, **Amir O** and Kim HA. Nonlinear thermoelastic topology optimization with the level-set method. Presentation and full conference paper in proceedings: AIAA SciTech Forum; San Diego, USA, January 2019.

Research reports or Case reports

1. Søndergaard A and **Amir O**. Topology optimization of robotically assembled timber structures. Summary of research at the Chair of Architecture and Digital Fabrication, ETH Zurich, 2013.

16. CONFERENCES

Keynote talks

1. **Amir O**. Revisiting approximate reanalysis in topology optimization. Abstract and presentation in World Congress on Computational Mechanics WCCM XI – ECCM V; Barcelona, Spain, July 2014. Keynote in mini-symposium "New Trends in Topology Optimization".
2. **Amir O**. Topology optimization with inexact design sensitivities. Invited to give keynote in Thematic Session on "Optimization for Solids and Fluids" in 25th International Congress of Theoretical and Applied Mechanics ICTAM 2020; Milano, Italy, August 2020 (postponed to 2021).

Invited talks

International

1. **Amir O**. Topology optimization of reinforced concrete structures. Abstract and presentation in EUROMECH 522 Colloquium; Erlangen, Germany, October 2011.
2. **Amir O**. Topology optimization with nonlinear mechanical models for achieving constrained linear responses. Abstract and presentation in The 3rd International Workshops on Advances in Computational Mechanics IWACOM-III; Tokyo, Japan, October 2015.
3. **Amir O**, Reuveny L, Fischer A and Bar-Yoseph P. Topology Optimization for Design of Porous Scaffolds for Bone Tissue Engineering. Abstract and presentation in the 14th International Symposium on Computer Methods in Biomechanics and Biomedical Engineering; Tel-Aviv, Israel, September 2016.
4. **Amir O**, Mass Y and Amir E. Large-scale topology optimization oriented towards additive manufacturing. Extended abstract and presentation in IUTAM Symposium "When Topology Optimization Meets Additive Manufacturing – Theory and Methods"; Dalian, China, October 2018.
5. **Amir O**. Topology optimization with inexact design sensitivities. Invited to IUTAM Symposium on Ultralarge-scale Topology Optimization; Copenhagen, Denmark, June 2020 (postponed to 2021).

National

1. **Amir O**. An introduction to topology optimization: A novel tool for computational design. Presentation in Optimization and Hyperworks Conference; Shefayim, Israel, November 2012.
2. **Amir O**. On the prospects of applying structural optimization methodologies for achieving sustainable structural design. Abstract and presentation in US-Israel Workshop on Industrial Ecology in Multi-Scale Design and Construction of Sustainable Built Environments; Tel Aviv, Israel, March 2014.
3. **Amir O**. A tutorial on topology optimization – methods and applications. Israel Symposium on Computational Mechanics ISCM-42; Haifa, Israel, March 2017.

Contributed talks

1. **Amir O**, Bendsøe MP and Sigmund O. Approximate reanalysis in topology optimization. Abstract and presentation in World Congress on Computational Mechanics WCCM8 - ECCOMAS 2008; Venice, Italy, July 2008.
2. **Amir O**. Topology optimization for crashworthiness design using approximate procedures. Abstract and presentation of the Ph.D. project in the 12th DCAMM Symposium; Ringsted, Denmark, March 2009.
3. **Amir O**, Stolpe M and Sigmund O. Efficient computational procedures for topology optimization of nonlinear structures. Abstract and presentation in European Conference on Computational Mechanics ECCM 2010; Paris, France, May 2010.
4. **Amir O**. Topology optimization procedures for reinforced concrete design. Abstract and presentation in Israel Symposium on Computational Mechanics ISCM-32; Afeka, Israel, March 2012.
5. **Amir O**. Topology optimization procedures for reinforced concrete design. Short paper and presentation in International Congress on Theoretical and Applied Mechanics ICTAM 2012; Beijing, China, August 2012.
6. **Amir O**, Aage N and Lazarov BS. On multigrid-CG for efficient topology optimization. Abstract and presentation in World Congress for Structural and Multidisciplinary Optimization WCSMO-10; Orlando, Florida, May 2013.

7. **Amir O**. Revisiting approximate reanalysis in topology optimization: On the advantages of recycled preconditioning in a minimum weight procedure. Abstract and presentation in Israel Symposium on Computational Mechanics ISCM-36; Haifa, Israel, April 2014.
8. **Amir O**, Lavan O and Pollini N. Simultaneous topology and sizing optimization of viscous dampers in seismic retrofitting of frame structures. Abstract and presentation in International Conference on Engineering and Applied Sciences Optimization OPTi-2014; Kos, Greece, June 2014.
9. **Amir O**. An alternative approach for satisfying stress constraints in continuum topology optimization using nonlinear material modeling. Abstract and presentation in World Congress for Structural and Multidisciplinary Optimization WCSMO-11; Sydney, Australia, June 2015.
10. Pollini N, Lavan O and **Amir O**. Minimum-cost topology and sizing optimization of viscous dampers for seismic retrofitting of 3-D frame structures. Abstract and presentation in World Congress for Structural and Multidisciplinary Optimization WCSMO-11; Sydney, Australia, June 2015.
11. **Amir O**. Topology optimization procedures with material nonlinearities for reducing stress concentrations. Abstract and presentation in US National Congress on Computational Mechanics USNCCM 13; San Diego, California, July 2015.
12. Mass Y and **Amir O**. Topology optimization for additive manufacturing: accounting for overhang limitations using a virtual skeleton. Abstract and presentation in European Congress on Computational Methods in Applied Sciences and Engineering ECCOMAS 2016; Crete, Greece, June 2016.
13. Pollini N, Lavan O and **Amir O**. Minimum-cost topology and sizing optimization of nonlinear viscous dampers for seismic retrofitting of 3-D frame structures. Abstract and presentation in European Congress on Computational Methods in Applied Sciences and Engineering ECCOMAS 2016; Crete, Greece, June 2016.
14. Madah H and **Amir O**. Optimal design of skeletal structures with buckling considerations using nonlinear beam modeling. Abstract and presentation in European Congress on Computational Methods in Applied Sciences and Engineering ECCOMAS 2016; Crete, Greece, June 2016.
15. Pollini N, Lavan O and **Amir O**. Optimization-based minimum-cost design of nonlinear fluid viscous dampers and their supporting braces for seismic retrofitting. Abstract and presentation in the 34th Israeli Conference on Mechanical Engineering ICME 2016; Haifa, Israel, November 2016.
16. Mass Y and **Amir O**. Topology optimization for additive manufacturing: accounting for overhang limitations using a virtual skeleton. Abstract and presentation in the 34th Israeli Conference on Mechanical Engineering ICME 2016; Haifa, Israel, November 2016.
17. **Amir O** and Mass Y. Topology optimization for staged construction with applications to additive manufacturing. Abstract and presentation in EUCCO 2016 – 4th European Conference on Computational Optimization; Leuven, Belgium, September 2016.
18. Pollini N, Lavan O and **Amir O**. Topology and sizing optimization of nonlinear viscous dampers and their supporting braces for the displacement control of yielding frame structures. Abstract and presentation in World Congress for Structural and Multidisciplinary Optimization WCSMO-12; Braunschweig, Germany, June 2017.
19. Mass Y and **Amir O**. Large-scale three-dimensional topology optimization considering overhang limitations in 3-D printing. Abstract and presentation in World Congress for Structural and Multidisciplinary Optimization WCSMO-12; Braunschweig, Germany, June 2017.

20. Amir E and **Amir O**. Efficient high resolution topology optimization using beam modeling. Abstract and presentation in World Congress for Structural and Multidisciplinary Optimization WCSMO-12; Braunschweig, Germany, June 2017.
21. Shakour E and **Amir O**. Simultaneous shape and topology optimization of prestressed concrete beams. Abstract and presentation in World Congress for Structural and Multidisciplinary Optimization WCSMO-12; Braunschweig, Germany, June 2017.
22. **Amir O** and Lazarov BS. Satisfying stress constraints in density based topology optimization by length scale control. Abstract and presentation in World Congress for Structural and Multidisciplinary Optimization WCSMO-12; Braunschweig, Germany, June 2017.
23. **Amir O** and Mass Y. Large-scale three-dimensional topology optimization considering overhang limitations in 3-D printing. Abstract and presentation in SIM-AM – Simulation for Additive Manufacturing; Munich, Germany, October 2017.
24. **Amir O** and Spicer M. Efficient topology optimization with geometric nonlinearities using reanalysis-based approaches. Abstract and presentation in 13th World Congress on Computational Mechanics WCCM 2018; New York, USA, July 2018.
25. Amir E and **Amir O**. Efficient large scale 3-D topology optimization using beam modeling. Abstract and presentation in World Congress for Structural and Multidisciplinary Optimization WCSMO-13; Beijing, China, May 2019.
26. **Amir O**. Reducing computational effort in stress-constrained topology optimization. Abstract and presentation in World Congress for Structural and Multidisciplinary Optimization WCSMO-13; Beijing, China, May 2019.

Participation in organizing conferences

International

1. 10th World Congress for Structural and Multidisciplinary Optimization WCSMO-10, Orlando, Florida, May 2013: Member of the international scientific committee.
2. International Conference on Engineering and Applied Sciences Optimization OPTi-2014, Kos, Greece, June 2014: Minisymposium organizer (together with Mattias Schevenels, KU Leuven).
3. 11th World Congress for Structural and Multidisciplinary Optimization WCSMO-11, Sydney, Australia, June 2015: Member of the international scientific committee.
4. 13th World Congress on Computational Mechanics WCCM 2018, New York, USA, July 2018: Minisymposium organizer together with Junji Kato (Tohoku), Mathias Wallin (Lund), Mingdong Zhou (Shanghai Jiao Tong), Peter Dunning (Aberdeen), Ekkehard Ramm (Stuttgart).
5. 12th World Congress for Structural and Multidisciplinary Optimization WCSMO-13, Beijing, China, May 2019: Member of the international scientific committee.
6. WJAM2020 International Conference on Welding, Joining and Additive Manufacturing, Tel-Aviv, Israel, January 2020: Member of the scientific committee.
7. 14th World Congress on Computational Mechanics WCCM 2020, Paris, France, July 2020 (postponed to 2021): Minisymposium organizer together with Youngsoo Choi (LLNL), Nicola Ferro (Poli. Milano), Simona Perotto (Poli. Milano), Gil-Ho Yoon (Hanyang).

National

1. 33rd Israel Symposium on Computational Mechanics ISCM-33, October 2012: Co-organizer (together with Mahmood Jabareen).
2. 48th Israel Symposium on Computational Mechanics ISCM-48, October 2020: Co-organizer (together with Mahmood Jabareen).