# RESUME Prof. Dan Givoli Lawrence and Marie Feldman Chair in Engineering

Department of Aerospace Engineering Technion—Israel Institute of Technology Haifa 32000, Israel

Place and Date of Birth: Israel, Nov. 27, 1956

Marital Status: Married, three children

# ACADEMIC DEGREES

- B.Sc. in Mechanical Engineering Tel Aviv University, 1979–83, conferred June 1984 (Magna Cum Laude)
- M.Sc. in Mechanical Engineering Tel Aviv University, 1983–85, conferred June 1985 (Magna Cum Laude)
- Ph.D. in Mechanical Engineering Stanford University, 1985–88, conferred June 1988

# ACADEMIC APPOINTMENTS

Professor, Lawrence and Marie Feldman Chair in Engineering, Dept. of Aerospace Engineering, Technion
Visiting Scientist, Interuniversity Institute for Marine Sciences, Eilat
Dean of the Graduate School, Technion
Visiting Professor, Dept. of Civil Engineering & Geosciences, Technical University of Delft, Delft, The Netherlands (sabbatical)
Visiting Professor, Dept. of Applied Mathematics, Tel-Aviv University (sabbatical)
Dean, Dept. of Aerospace Engineering, Technion
Professor, Dept. of Aerospace Engineering, Technion
Visiting Professor, Dept. of Applied Mathematics, Naval Postgraduate School, Monterey (sabbatical)
Associate Professor, Dept. of Aerospace Engineering, Technion
Visiting Associate Professor, Dept. of Computer Science, Rensselaer Polytechnic Institute (sabbatical)
Senior Lecturer, Dept. of Aerospace Engineering, Technion (with tenure since 1993)
Academic Visitor, GFD group, Woods Hole Oceanographic Institute
Lecturer, Dept. of Aerospace Engineering, Technion
Postdoctoral Fellow, Dept. of Aerospace Engineering, Technion

1985 – 1988 Research Assistant, Div. of Applied Mechanics, Stanford University
 1982 – 1985 Research and Teaching Assistant, Dept. of Mechanics, Materials and Structures, Tel Aviv University

#### PROFESSIONAL EXPERIENCE

- Short-term consulting: Motorola, 2014, composite materials; Israel ONR, 2014, underwater acoustics; RAFAEL, 2013, underwater acoustics; Aero Magnesium, 2012, finite element analysis; Superfine, 2007, aeroacoustics; Olive Engineering, 2007, structural analysis; Flight Science Branch, IAF, 2007, vibration analysis; Israel Aircraft Industries (IAI), 2006, structural analysis; Semi Conductor Devices (SCD), 2003, finite element analysis; Wales Ltd., 2001, finite element analysis; IAI, 2001, finite element analysis and fracture; El Al Israel Airlines, 1999, finite element analysis.
- Consulting to Shamir Optical Industries, 1991, 1997–99, finite element analysis (leading to the production of nearly-optimal and optimal progressive lenses).
- Joint work with Alliance (Israeli tire maker), 1997–98, finite element analysis of tire production processes.
- Consulting to BERCOM (the Israeli branch of SASI, the ANSYS code company), 1995, finite element analysis and structural optimization, on a project of the Israel Electric Corporation.
- Participation in the investigation group of the 1992 El Al Israel Airlines Boeing 747 accident in Amsterdam, 1993, finite element analysis and structural mechanics (including meetings with the Boeing investigation group, and consulting to El Al).
- IMI, 1983–85 (two years), finite element stress analysis and composite materials (Stress Analysis Department).
- Israel Aircraft Industries (IAI), Summer 1982 (4 months), finite element stress analysis (Stress Analysis Department).

### RESEARCH INTERESTS AND EXPERIENCE

- Technion, research in the area of computational mechanics. Particular interests: numerical methods for wave problems, finite element methods for solid mechanics, structures, acoustics and heat transfer, and combined analytic-numerical methods in continuum mechanics.
- Stanford University, CA, Research Assistant of Prof. T.J.R. Hughes (1985–86) and Research Assistant of Prof. J.B. Keller (1986–88), at the Division of Applied Mechanics, subject—finite element methods in acoustics and solid mechanics.
- Tel Aviv University, M.Sc. thesis research, advisers—Prof. M.A. Brull and Dr. I. Levit, 1983–85.
- Tel Aviv University, Research Assistant of Dr. M. Fuchs at the Department of Mechanics, Materials and Structures, subject—optimization and structural design, 1982–84.

# TEACHING EXPERIENCE

### Technion:

- Seminar in Structures (Undergrad.), Wint. 1989
- Mechanics of Solids (1) (Undergrad.), Wint. 1996
- Mechanics of Solids (2) (Undergrad.), Spr. 1990, Wint. 1990, Spr. 1993, Spr. 1999, Wint. 1999, Spr. 2001, Wint. 2002-Wint. 2006
- Fundamentals of Aeronautical Structures (Undergrad.), Spr. 1991—Wint. 1992, Spr. 1997—Wint. 1998, Spr. 2000, Wint. 2000, Wint. 2012—Wint. 2014
- Analysis of Structures & Computer Applications (Undergrad.), Spr. 2007, Wint. 2007, Spr. 2008, Wint. 2008, Spr. 2009, Wint. 2009, Spr. 2010, Spr. 2011, Wint. 2017
- Finite Elements in Aeronautical Engineering (Grad. and Undergrad.), Wint. 1988, Wint. 1989, Spr. 1991,
   Wint. 1992, Spr. 1994, Wint. 1994, Spr. 1995, Wint. 1996, Wint. 1997, Wint. 1998, Wint. 1999, Spr. 2001,

- Wint. 2002, Spr. 2006, Wint. 2007, Wint. 2008, Spr. 2011, Spr. 2012, Wint. 2013, Wint. 2014, Wint. 2016, Spr. 2018, Wint. 2019, Spr. 2021, Wint. 2022
- The Finite Element Method for Initial and Boundary Value Problems (Grad.), Spr. 1989, Spr. 1990, Wint. 1991, Spr. 1993, Spr. 1997, Spr. 1999, Wint. 2000, Spr. 2003, Spr. 2007, Wint. 2011, Wint. 2012, Spr. 2015, Spr. 2017, Wint. 2018, Wint. 2020, Spr. 2022
- Theory of Aeronautical Structures (1) (Grad., guided reading), Spr. 1998
- Applied Mathematics (2) (Grad.), Wint. 1990, Spr. 1992, Wint. 1993, Spr. 1998, Spr. 2000, Wint. 2003, Spr. 2008, Spr. 2012
- Selected Topics in Applied Mathematics: Elasticity (Grad.), Wint. 2009
- Intro. to the Theory of Elasticity (Undergrad.), Spr. 2019, Spr. 2020
- Analysis of Thin-Walled Structures (Grad. and Undergrad.), Wint. 2021, Spr. 2023.

### Other:

- Tel Aviv University, Visiting Lecturer at the Department of Mechanics, Materials and Structures, graduate level course: "Variational Methods and Finite Elements I," Wint. 1988.
- Tel Aviv University, Teaching Assistant at the Department of Mechanics, Materials and Structures, courses: "Mechanics (1)," "Theory of Machines," "Mechanics of Solids (2)," 1983–85.

# TECHNION ACTIVITIES

- Dean of the Graduate School, 2017–2022.
- Chairman of Technion's Professional Committees for Promotion and Tenure, 2007–2015.
- Elected Senate Member, 2006–2015.
- Member of the Technion's Applied Mathematics Committee, 2006–2015.
- Member of Search Committee for Technion-Level Deans, 2008–11.
- Member of the Committee for Nomination of Distinguished Professors, 2009, 2012, 2013–15.
- Member of the Harvey-Prize Council, 2007–08.
- Member of the Technion's Prep. Nominations & Promotions Committee, 2003.
- Chairman of the Technion's Academic Court for Students, 2002–2003.
- Chairman of the Technion's Computational Mechanics Committee, 1999–2001.
- Member of the Technion's Senate Committee for Development and Steering of Computing, 1998–2000.
- Judge in the Technion's Academic Court for Students, 2000–01.
- Judge in the Technion's Academic Court for Faculty, 1997–2001.
- Member of the Asher Space Research Center, 1998–present.
- Member of the Technion's Applied Mathematics Committee, 1997–2001.
- Member of the Technion's Computing Committee, 1997–98.
- Department Representative in the Technion's Senate, 1995.
- Interviewer/Examiner in the Technion Excellence Program, 1994, 95, 97–2001.
- Departmental posts: Member of the Academic Promotions Committee (2001–present), Head of Dept. Office for Graduate Studies (2013–2015, three years), Member of Dept. Development Committee (2010–12), Member of Dept. Search Committee for New Faculty (2010–12), Dean (2004–05), Chairman of Dept. Computing Committee (1997–2001), Head of Dept. Office for Undergraduate Studies (1993–95), Member of Dept. Undergraduate Curriculum Committee (1990–95), Organizer of the Dept. Seminar on Aerospace Engineering (1991–92).

### PUBLIC PROFESSIONAL ACTIVITIES

### Member of an Editorial Board:

- Associate Editor, Wave Motion, since 2003.
- Associate Editor, Journal of Theoretical & Computational Acoustics (JTCA, formerly JCA), since 2007, Senior Editor since 2019 (Member of Editorial Board since 1999).
- Member of the Editorial Advisory Board, Computer Methods in Applied Mechanics and Engineering (CMAME), since 2011.
- Member of the Advisory Board, International Journal for Numerical Methods in Engineering (IJNME), since 2003.
- Member of the Editorial Advisory Board, Advanced Modeling and Simulation in Engineering Sciences (AMSES), since 2012.
- Member of the Advisory Board, International Journal for Multiscale Computational Engineering (IJMCE), since 2003.
- Member of the Editorial Board, Computer Modeling in Engineering and Sciences (CMES), since 1999.
- Member of the Editorial Board, International Journal of Numerical Methods for Heat and Fluid Flow (NMHFF), since 1991.

# Editor of Journal Issues, Books and Newsletters:

- Guest editor of a special issue of Wave Motion, on Advanced Modelling of Wave Propagation in Solids (with J. Engelbrecht, T. Hagstrom and G. Maugin), Vol. 50, No. 7, Nov. 2013.
- Guest editor of a special issue of the Journal of Computational Acoustics (JCA), on Advanced Computational Methods for Wave Motion in Complex Media (with G. Seriani), Vol. 20, No. 2, June 2012.
- Guest editor of a double special issue of the journal Int. J. for Multiscale Computational Engineering, on Multiscale Computational Engineering in Israel (with S. Krylov), Vol. 6, Nos. 5–6, Dec. 2008.
- Editor of the book A Celebration of Mathematical Modeling; The Joseph B. Keller Anniversary Volume (with M. Grote and G. Papanicolaou), Kluwer, Dordrecht, The Netherlands, 2004.
- Guest editor of a special issue of the journal Wave Motion, on New Computational Methods for Wave Propagation (with I. Harari), Vol. 39, No. 4, April 2004.
- Editor of the book Advances in the Mechanics of Plates and Shells; The Avinoam Libai Anniversary Volume (with D. Durban and J.G. Simmonds), Kluwer, Dordrecht, The Netherlands, 2001.
- Guest editor of a special issue of the Journal of Computational Acoustics (JCA), on Finite Elements for Wave Propagation (with J. Astley, K. Gerdes and I. Harari), Vol. 8, No. 1, March 2000.
- Guest editor of a special issue of the journal Computer Methods in Applied Mechanics and Engineering (CMAME), on *Exterior Problems of Wave Propagation* (with I. Harari), Vol. 164, Nos. 1–2, Oct. 1998.
- Editor of the Israel Association for Computational Methods in Mechanics (IACMM) Newsletter, 2000–2015.

### Refereeing:

• Serving as a referee for the following international journals, publishers and associations:

Journals; frequently: Computer Methods in Applied Mechanics and Engineering, J. Computational Physics, Int. J. Numerical Methods in Engineering, Int. J. Numerical Methods for Heat and Fluid Flow, Wave Motion, Applied Numerical Mathematics, Communications in Numerical Methods in Engineering, J. Computational Acoustics, Advances in Engineering Software, Computational Mechanics, Computer Modeling in Engineering & Sciences, Finite Elements in Analysis and Design.

Journals; infrequently: AIAA J., Int. J. Solids & Structures, Composites Engineering, AIChE Journal, J. Sound and Vibration, Mathematical and Computer Modelling, SIAM J. Numerical Analysis, Numerical Methods for Partial Differential Equations, Proceedings A of the Royal Society, Int. J. Numerical Methods in Fluids, SIAM J. Scientific Computing, Numerische Mathematik, J. Crystal Growth, Computers and Structures, Physical Review, J. Acoustical Society of America, SIAM J. Applied Mathematics, Mathematics of Computation, Applied Mechanics Reviews, Structural Engineering & Mechanics, Int. J. of Mathematics & Mathematical Sciences, J. Marine Science & Technology, IMA J. of Numerical Analysis, J. Engineering Mechanics, J. Geophysical Research, Int. J. of Non-Linear Mechanics, ASME J. Applied Mechanics, Mathematics and Computer in Simulations, Int. J. Computational Methods, J. Computational & Applied Mathematics, Int. J. Heat and Mass Transfer, J. of Zhejiang University, Scientific Computing, Acta Acoustica, Engineering Structures, J. Geophysics & Engineering, Int. J. Numerical Methods in Biomedical Engineering, Mathematical Modelling & Numerical Analysis.

Publishers, Associations, Funding Agencies and Conferences; frequently: Israel Science Foundation (ISF), US-Israel Binational Science Foundation (BSF), Emerald PhD Thesis Competition, Fulbright grants.

Publishers, Associations, Funding Agencies and Conferences; infrequently: Elsevier Science Publications, Int. Science Foundation, US National Science Foundation (NSF), Israel Ministry of Science and Arts, Prentice-Hall Publishers, New Zealand Marsden Fund, Royal Society of New Zealand, National Research Council of Chile, UK Engineering Research Council, UK Leverhulme Research Trust, Wiley, UK Royal Academy of Engineering, Int. Symp. on Symbolic & Algebraic Computation, Literati Club, World Scientific Publications, ASME Conf. on Eng. System Des. & Anal., Dutch National Technology Foundation, French National Research Agency, Chile National Science Foundation, Pazy Foundation.

# Organization and Chairing in Conferences:

- 6th Conf. on Computational Methods for Thermal Problems (ThermaComp-2024), Sept. 2024, Montenegro: member of the Int. Advisory Committee.
- 16th Int. Conf. on Mathematical & Numerical Aspects of Wave Propagation (WAVES-2024), July 2024, Berlin, Germany: member of the Scientific Committee.
- 2024 World Congress on Computational Mechanics (WCCM-2024), July 2024, Vancouver, Canada, Member of the Int. Scientific Committee.
- 2024 ECCOMAS Congress (ECCOMAS-2024), June 2024, Lisbon, Portugal: Member of the Scientific Committee.
- 9th ECCOMAS Conference on Computational Dynamics (COMPDYN-2023), June 2023, Athens, Greece: member of the Scientific Committee, organizer of a 2-session mini-symposium.
- 62st Israel Annual Conf. on Aerospace Sciences (IACAS), March 2023, Tel Aviv & Haifa: member of the Organizing Committee.
- European Congress on Computational Methods (ECCOMAS-2022), June 2022, Oslo, Norway: Organizer of a mini-symposium.
- 14th Int. Conf. on Computational Structures Technology (CST-2022), Aug. 2022, Montpelier, France: Member of the Editorial Board.
- 15th Int. Conf. on Mathematical & Numerical Aspects of Wave Propagation (WAVES-2022), July 2022, Paris, France: member of the Scientific Committee.
- 61st Israel Annual Conf. on Aerospace Sciences (IACAS), March 2022, Tel Aviv & Haifa: member of the Organizing Committee.
- 16th U.S. National Congress on Computational Mechanics (USNCCM-2021), online, July 2021: member of the Int. Scientific Committee.
- IUTAM Symposium on Computational methods for large-scale and complex wave problems, Tokyo (online), July 2021, online: chair of a session.

- 8th ECCOMAS Conference on Computational Dynamics (COMPDYN-2021), June 2021, online: Member of the Scientific Committee.
- 14th Int. Conf. on Mathematical & Numerical Aspects of Wave Propagation (WAVES-2019), Aug. 2019, Vienna, Austria: member of the Scientific Committee, chairman of 2 sessions.
- 7th ECCOMAS Conference on Computational Dynamics (COMPDYN-2019), June 2019, Heraklion, Greece: Member of the Scientific Committee.
- 59th Israel Annual Conf. on Aerospace Sciences (IACAS), Feb. 2019, Tel Aviv & Haifa: member of the Organizing Committee.
- 8th Workshop of the Israel Structural Integrity Group (ISIG), Jan. 2019, Tel Aviv: Member of the judge panel for student competition.
- 13th World Congress on Computational Mechanics (WCCM-2018), July 2018, NY, USA: Member of the Scientific Committee.
- 6th European Conference on Computational Mechanics (ECCM-2018), June 2018, Glasgow, UK: Member of the Scientific Committee.
- 13th Int. Conf. on Computational Structures Technology (CST-2018), Sept. 2018, Barcelona, Spain: Member of the Editorial Board.
- 13th Int. Conf. on Theoretical & Computational Acoustics (ICTCA-2017), July 2017, Vienna, Austria: Member of the Technical & Advisory Committees, chairman of a session.
- 6th ECCOMAS Conference on Computational Dynamics (COMPDYN-2017), June 2017, Rhodes, Greece: Member of the Scientific Committee.
- 13th Int. Conf. on Mathematical & Numerical Aspects of Wave Propagation (WAVES-2017), May 2017, Minneapolis, USA: Member of the Scientific Committee.
- 57th Israel Annual Conf. on Aerospace Sciences (IACAS), Feb. 2017, Tel Aviv & Haifa: Chairman of a session, member of the Organizing Committee.
- 4th Int. Conf. on Computational Methods for Thermal Problems (ThermaComp-2016), July 2016, Atlanta, USA: member of the Int. Advisory Committee.
- 12th World Congress on Computational Mechanics (WCCM-2016), July 2016, Seoul, Korea: Member of the Int. Scientific Committee.
- European Congress on Computational Methods (ECCOMAS-2016), June 2016, Crete: Member of the Scientific Committee.
- 5th Workshop of the Israel Structural Integrity Group (ISIG), Jan. 2016, Tel Aviv: Member of the judge panel for student competition.
- 39th Israel Symposium on Computational Mechanics (ISCM-39), Technion, Nov. 2015: Chairman of a session.
- 13th Int. Conf. on Computational Structures Technology (CST-2015), Sept. 2015, Prague, Czech Rep.: Member of the Editorial Board.
- 12th Int. Conf. on Mathematical and Numerical Aspects of Wave Propagation (WAVES-2015), July 2015, Karlsruhe, Germany: Member of the Scientific Committee, organizer of a 2-session mini-symposium, chairman of another session.
- 5th ECCOMAS Conference on Computational Dynamics (COMPDYN-2015), May 2015, Crete, Greece: Member of the Scientific Committee, organizer of a 2-session mini-symposium, chairman of another session
- 33rd Israel Conf. on Mechanical Engineering (ICME-2015), March 2015, Tel Aviv: chairman of a session.
- 55th Israel Annual Conf. on Aerospace Sciences (IACAS), Feb. 2015, Tel Aviv & Haifa: Member of the Program Committee and Organizing Committee.

- 11th European Conf. on Non-Destructive Testing (NDT-2014), Oct. 2014, Prague, Czech Republic: member of the Scientific Committee.
- 12th Int. Conf. on Computational Structures Technology (CST-2014), Sept. 2014, Naples, Italy: Member of the Editorial Board.
- 11th World Congress on Computational Mechanics (WCCM-2014), July 2014, Barcelona, Spain: Member of the Scientific Committee, organizer of a 4-session mini-symposium.
- 3rd Int. Conf. on Computational Methods for Thermal Problems (ThermaComp-2014), June 2014, Slovenia: member of the Int. Advisory Committee.
- 11th Int. Conf. on Theoretical & Computational Acoustics (ICTCA), March 2014, College Station, Texas: Member of the Technical Committee.
- 54th Israel Annual Conf. on Aerospace Sciences (IACAS), Feb. 2014, Tel Aviv & Haifa: Member of the Program Committee and Organizing Committee; chairman of a session.
- Conference on Mathematical Modelling, in honor of the 90th birthday of Joseph B. Keller (JBK90), Aug. 2013, Lausanne, Switzerland: one of the organizers.
- 4th ECCOMAS Conference on Computational Dynamics (COMPDYN-2013), June 2013, Kos, Greece: Member of the Scientific Committee, organizer of a 3-session mini-symposium, chairman of an additional session.
- 53rd Israel Annual Conf. on Aerospace Sciences (IACAS), Feb. 2013, Tel Aviv & Haifa: Member of the Program Committee and Organizing Committee.
- 11th Int. Conf. on Mathematical and Numerical Aspects of Wave Propagation (WAVES-2013), June 2013, Tunis: Member of the Scientific Committee.
- EUROMECH Colloquium on Advanced Modelling of Wave Propagation in Solids, Oct. 2012, Prague: Member of the Scientific Committee, chairman of a session.
- European Congress on Computational Methods (ECCOMAS-2012), Sept. 2012, Vienna: Member of the Scientific Committee, organizer of a 4-session mini-symposium, chairman of another session.
- 11th Int. Conf. on Computational Structures Technology (CST-2012), Sept. 2012, Dubrovnik, Croatia: Member of the Editorial Board.
- 10th World Congress on Computational Mechanics (WCCM-10), July 2012, Sao Paulo, Brazil: Member of the International Scientific Committee.
- Workshop on Wave Propagation in Complex Media, May 2012, Heraklion, Greece: Chairman of a session.
- 52nd Israel Annual Conf. on Aerospace Sciences (IACAS), Feb. 2012, Tel Aviv & Haifa: Chairman of the Organizing Committee.
- 2nd Int. Conf. on Computational Methods for Thermal Problems, Sept. 2011, Dalian, China: Member of the International Advisory Committee.
- 11th US National Congress on Computational Mechanics (USNCCM-11), July 2011, Minneapolis, USA: member of the Int. Scientific Committee.
- 7th GRACM Int. Congress on Computational Mechanics, June 2011, Athens: Member of the Scientific Committee.
- 10th Int. Conf. on Mathematical and Numerical Aspects of Wave Propagation (WAVES-2011), July 2011, Vancouver: Member of the Scientific Committee.
- 3rd ECCOMAS Conference on Computational Dynamics (COMPDYN-2011), May 2011, Corfu, Greece: Member of the Scientific Committee, organizer of a 3-session mini-symposium.
- 10th Int. Conf. on Theoretical & Computational Acoustics (ICTCA), April 2011, Taipei, Taiwan: Member of the Technical Committee, organizer of a 3-session mini-symposium.
- 51st Israel Annual Conf. on Aerospace Sciences (IACAS), Feb. 2011, Tel Aviv & Haifa: Member of the Program Committee.

- 29th Israel Symposium on Computational Mechanics (ISCM-29), Technion, Oct. 2010: Co-organizer.
- 10th Int. Conf. on Computational Structures Technology (CST-2010), Sept. 2010, Valencia, Spain: Member of the Editorial Board.
- 9th World Congress on Computational Mechanics (WCCM-9), July 2010, Sidney, Australia: Member of the International Scientific Committee, organizer of a 2-session mini-symposium.
- 4th European Conf. on Computational Mechanics (ECCM-2010), May 2010, Paris: Member of the Scientific Committee, organizer of a 3-session mini-symposium.
- 50th Israel Annual Conf. on Aerospace Sciences (IACAS), Feb. 2010, Tel Aviv: Chairman of the Niv-Ya Award Session.
- 9th Int. Conf. on Theoretical & Computational Acoustics (ICTCA), Sept. 2009, Dresden, Germany: Member of the Technical Committee, organizer of a 4-session mini-symposium.
- 1st Int. Conf. on Computational Methods for Thermal Problems, Sept. 2009, Naples, Italy: Member of the Int. Advisory Committee.
- 9th Int. Conf. on Mathematical and Numerical Aspects of Wave Propagation (WAVES-09), June 2009, Pau, France: Member of the Scientific Committee; Chairman of a session.
- 2nd South East European Conf. on Computational Mechanics (SEECCM-09) and 2nd ECCOMAS Conference on Computational Dynamics (COMPDYN-09), June 2009, Rhodes, Greece: Member of the Int. Advisory Board; Organizer of a 2-session mini-symposium.
- Computational Structures Technology 2008 Conf. (CST-2008), Spet. 2008, Athens, Greece: Member of the Editorial Board.
- 8th World Congress on Computational Mechanics (WCCM-8) and ECCOMAS-2008, June 2008, Venice, Italy: Member of the International Advisory Board, organizer of a 4-session mini-symposium.
- 18th International Conference on Domain Decomposition Methods (DD18), Jan. 2008, Jerusalem: Member of the Organizing Committee.
- 3rd Asian-Pacific Congress on Computational Mechanics (APCOM'07), Dec. 2007, Kyoto, Japan: Member of the Scientific Advisory Board.
- 23rd Israel Symposium on Computational Mechanics (ISCM-23), Weizmann Institute of Science, Oct. 2007: co-organizer.
- 9th US National Congress on Computational Mechanics, July 2007, San Francisco, CA: Organizer of a mini-symposium (2 sessions).
- 8th Int. Conf. on Theoretical & Computational Acoustics (ICTCA), July 2007, Heraklion, Crete: Member of the Technical Committee, organizer of a 3-session mini-symposium.
- ECCOMAS Conference on Computational Dynamics (COMPDYN), July 2007, Rethymno, Crete: Organizer of two mini-symposia (one-session each).
- 22nd Israel Symposium on Computational Mechanics (ISCM-22), Technion, March 2007: Organizer (with P. Bar-Yoseph).
- 8th Int. Conf. on Computational Structures Technology, Sept. 2006, Gran Canaria, Spain: Member of the Editorial Board.
- 7th World Congress on Computational Mechanics, July 2006, Los Angeles, CA: Member of the Advisory Board, organizer of a mini-symposium, chairman of a session.
- Int. Symp. on Mechanical Waves in Solids, May 2006, Hangzhou, China: Member of the Scientific Advisory Committee.
- 46th Israel Annual Conf. on Aerospace Sciences (IACAS), Feb. 2006, Tel Aviv & Haifa: Member of the Organizing Committee.
- 7th Int. Conf. on Theoretical & Computational Acoustics, Sept. 2005, Hangzhou, China: Member of the Technical Committee.

- 8th US National Congress on Computational Mechanics, July 2005, Austin, TX: Chairman of a session.
- 7th Int. Conference on Mathematical and Numerical Aspects of Wave Propagation, June 2005, Brown University: Member of the Scientific Committee.
- 45th Israel Annual Conf. on Aerospace Sciences (IACAS), Feb. 2005, Tel Aviv & Haifa: Member of the Organizing Committee; Chairman of a session.
- 7th Int. Conf. on Computational Structures Technology, Sept. 2004, Lisbon, Portugal: Member of the Conference Editorial Board.
- The 2004 Congress of European Community on Computational Methods in Applied Sciences (ECCO-MAS), July 2004, Jyväskylä, Finland: Member of the Computational Mathematics and Numerical Methods Committee.
- 16th Israel Symposium on Computational Mechanics (ISCM-16), CRI, U. of Haifa, March 2004: Organizer
- 44th Israel Annual Conf. on Aerospace Sciences (IACAS), Feb. 2004, Tel Aviv & Haifa: Member of the Organizing Committee; Chairman of 2 sessions.
- 7th US National Congress on Computational Mechanics, July 2003, Albuquerque, NM: Organizer of a mini-symposium (Computational Methods for Wave Propagation, 4 sessions).
- 14th Israel Symposium on Computational Mechanics (ISCM-14), Technion, Haifa, April 2003: Organizer (with P. Bar-Yoseph).
- 6th US National Congress on Computational Mechanics, Aug. 2001, Dearborn, MI: Organizer of a minisymposium (Finite Elements for Wave Problems, 2 sessions).
- ICES'01 Int. Conf. on Computational Engineering Sciences, Aug. 2001, Puerto Vallarta, Mexico: Member of the Scientific Advisory Committee.
- The 5th Int. Conf. on Theoretical & Computational Acoustics, May 2001, Beijing, China: Member of the Scientific Committee.
- 41st Israel Annual Conf. on Aerospace Sciences (IACAS), Feb. 2001, Tel Aviv & Haifa: Member of the Paper Committee.
- 9th Israel Symposium on Computational Mechanics (ISCM-9), Technion, Haifa, Oct. 2000: Organizer (with P. Bar-Yoseph).
- The 2000 Congress of European Community on Computational Methods in Applied Sciences (ECCO-MAS), Sept. 2000, Barcelona, Spain: Member of the International Correspondents Committee; Organizer of mini-symposium (Finite Element Schemes for Wave Problems, 1 session).
- The 2nd Int. Conf. on Engineering Computational Technology, Sept. 2000, Leuven, Belgium: Member of the Editorial Board.
- 40th Israel Annual Conf. on Aerospace Sciences (IACAS), Feb. 2000, Tel Aviv & Haifa: Chairman of the Paper Committee.
- The 1999 Conf. on The Mathematics of Finite Elements and Applications (MAFELAP), June 1999, Brunel University, England: Organizer of a mini-symposium (Finite and Infinite Elements for Exterior Problems, 2 sessions); Chairman of 2 other sessions.
- 4th Int. Conf. on Theoretical and Computational Acoustics, May 1999, Trieste, Italy: Member of the Scientific Committee; Organizer of a mini-symposium (Finite Element Methods for Wave Propagation, 4 sessions); Chairman of a session; Panelist in a discussion panel.
- 39th Israel Annual Conf. on Aerospace Sciences (IACAS), Feb. 1999, Tel Aviv & Haifa: Member of the Paper Committee; and Chairman of a session.
- 6th Israel Symposium on Computational Mechanics (ISCM-6), Technion, October 1998: the Organizer.

- 4th Int. Conf. on Spectral and High Order Methods, June 1998, Hertzelia, Israel: Member of the Local Organizing Committee; and Chairman of 2 sessions.
- 5th Israel Symposium on Computational Mechanics (ISCM-5), Tel Aviv University, Tel Aviv, April 1998: Organizer.
- 38th Israel Annual Conf. on Aerospace Sciences (IACAS), Feb. 1998, Tel Aviv & Haifa: Member of the Paper Committee.
- A Workshop on High Performance Computing and the Research Programs of the European Union, Nov. 1997, Technion, Haifa: the Organizer.
- 4th US National Congress on Computational Mechanics, Aug. 1997, San Francisco, CA: Member of the International Advisory Committee; and Organizer of 2 mini-symposia (Exterior Problems of Wave Propagation, 4 sessions; Numerical Methods for Crystal Growth Processes, 3 sessions).
- IUTAM Symposium on Computational Methods for Unbounded Domains, July 1997, Boulder, CO: Member of the International Advisory Committee; and Chairman of a session.
- IUTAM Symposium on Nonlinear Singularities in Deformation and Flow, March 1997, Haifa, Israel: Member of the Local Organizing Committee; and Organizer of the IACM Mini-symposium on Numerical Treatment of Singularities and Interfacial Phenomena.
- 3rd Israel Symposium on Computational Mechanics (ISCM-3), Technion, Haifa, April 1997: Organizer (with P. Bar-Yoseph).
- 35th Israel Annual Conf. on Aerospace Sciences (IACAS), Feb. 1995, Tel Aviv & Haifa: Member of the Paper Committee; and Chairman of a session.
- Int. Conf. on Theoretical and Computational Acoustics, July 1993, Yale University, Connecticut: Organizer of a session.
- 18th Int. Congress of Theoretical and Applied Mechanics (ICTAM), August 1992, Haifa, Israel: Member of the Local Organizing Committee.
- 1990 SIAM Annual Meeting, July 1990, Chicago, Illinois: Organizer and Chairman of the minisymposium on "Numerical Methods for Wave Problems in Unbounded Domains."
- 1988 SIAM Annual Meeting, July 1988, Minneapolis, Minnesota: Chairman of a session.

# Activity and Membership in Professional Societies:

- Israel Association for Computational Methods in Mechanics (IACMM): one of the founders, President (2007–2015), member of the Executive Council (1994–2021), liaison to IACM (2021–present).
- International Association for Computational Mechanics (IACM): member of the IACM General Council, 1994–2015, 2021–present.
- European Community Association of Computational Methods in Applied Sciences (ECCOMAS), Committee Member (and member of core group) of the Computational, Solid and Structural Mechanics Committee (ECCSM), 2001–present.
- EuroTech Forum (of six European technical universities) on Graduate Studies: member 2018–2022.
- The Israel Society of Aeronautics and Astronautics, Member.
- International Association for Mathematics and Computers in Simulation (IMACS), Member of the Technical Committee on Computational Acoustics, 2001–present.
- International Society for Computational Engineering and Sciences (ISCES), a Founding Member, 1999

  present.
- Society of Industrial and Applied Mathematics (SIAM): member
- Israel Society of Aeronautics and Astronautics (ISAA): member
- The Israel Society for Theoretical and Applied Mechanics (ISTAM): member

- Israel Structure Integrity Group (ISIG): member, from 2021.
- European Structural Integrity Society (ESIS): member, from 2021.

# **Activity in National Committees:**

- Member of the Judging Committee, Fulbright post-doctoral fellowships in Science & Engineering, 2013–2014.
- Coordinator & member of the Int. Theodore von Kármán Lecture Committee (for IACAS), Israel Society of Aeronautics and Astronautics, 2010-present.
- Member of the Judging Committee, Landau Foundation for Scientific Research, Mifal Hapayis, 2009.
- Member of the US-Israel Binational Science Foundation (BSF) Committee on Applied Mathematics, infrequently.
- Member of the Israeli Academy of Sciences Committee on Mechanics, every few years.
- Member of the Scientific Committee of the National Inter-University High Performance Computing Unit (HPCU), 2003.
- Member of the Israel Ministry of Science Committee on Applied Mathematics, 1999.

#### HONORS

- 2021 Technion's Rechler Prize for Excellence in Research.
- Gave the Warren Memorial Lecture, U. of Minnesota, Dept. of Civil, Envir. & Geo. Eng., 2015.
- Yanai Prize for Excellence in Academic Education, 2014 (awarded 2015).
- Fellow of the International Association for Computational Mechanics (IACM), since 2008.
- The Lawrence and Marie Feldman Chair in Engineering, since 2004.
- 2001 Conf. on Soft Computing (WSC6) Best Paper Award (with L. Manevitz and A. Bitar).
- 1996-97, 1997-98, 1999-2000, 2000-01, 2002-03 (top 5%), 2006, 2007-08 (top 4%), 2008-2009, 2009-2010, 2011-2012, 2012-2013 (top 4%), 2013-14, 2014-15 (top 4%), 2017-18, 2018-19 (top 4%), 2019-20 (top 4%), 2020-21, 2021-22: Technion Award for Distinguished Teaching.
- 1999 Academic Press Reviewer Award (for review in J. Computational Physics).
- 1998 Technion's Taub Award for Distinction in Research.
- Literati Club's 1998 Award of Excellence for the 1997 Outstanding Paper in the International Journal of Numerical Methods for Heat and Fluid Flow (for paper [46] in the Publ. List).
- Award: M.S. Geltman Memorial Academic Lectureship in Aerospace Engineering, 1990–93.
- Stanford University scholarship, 1985–88.
- Fulbright Ph.D. student (awarded by U.S.-Israel Educational Foundation, Aug. 1985).

# GRADUATE STUDENTS

(PA=Primary Adviser, AA=Additional Adviser)

# Completed Theses:

- 1991, Yossef Janashvilli (MSc), Dept. of Aero. Eng., PA: D.G. (Former adviser: I. Elishakoff).
- 1992, Leonid Rivkin (MSc), Dept. of Aero. Eng.
- 1993, Mattityahu Sabag (PhD), Dept. of Aero. Eng., PA: A. Rosen, AA: D.G.

- 1994, Gil Ben-Porat (MSc), Applied Mathematics Prog.
- 1995, Micha Margi (MSc), Dept. of Math. and Computer Science, U. of Haifa, PA: L. Manevitz, AA: D.G.
- 1995, Ilia Doukhovni (PhD), Dept. of Aero. Eng.
- 1996, Malek Yousef (MSc), Dept. of Math. and Computer Science, U. of Haifa, PA: L. Manevitz, AA: D.G.
- 1998, Lydia Peres (PhD), Applied Mathematics Prog., PA: Y. Rubinstein, AA: D.G. (PA during 1993–94.)
- 1999, Tatyana Demchenko (MSc), Applied Mathematics Prog.
- 1999, Fiana S. Yaacobson (PhD), Applied Mathematics Prog.
- 2000, Leonid Rivkin (PhD), Dept. of Aero. Eng.
- 2000, Nechemya Cohen (MSc), Dept. of Aero. Eng.
- 2001, Dafna Zelig (MSc), Applied Mathematics Prog., PA: S. Haber, AA: D.G.
- 2001, Vladislav Shenfeld (MSc), Applied Mathematics Prog., PA: D.G., AA: S. Vigdergauz.
- 2001, Ron Zusman (MSc), Dept. of Aero. Eng., PA: D.G., AA: A. Berkowitz.
- 2002, Akram Bitar (MSc), Dept. of Math. and Computer Science, U. of Haifa, PA: L. Manevitz, AA: D.G.
- 2003, Assaf Mar-Or (MSc), Cambridge U.-Technion Rotschild Fellowship, Applied Mathematics Prog.
- 2003, Vincent van Joolen (PhD), Dept. of Applied Math., Naval Postgraduate School, Monterey, CA, PA: B. Neta, AA: D.G.
- 2007, Assaf Mar-Or (PhD), Applied Mathematics Prog.
- 2008, Alex Kalvanov (ME), Dept. of Aero. Eng.
- 2008, Daniel Rabinovich (PhD), Dept. of Aero. Eng., PA: D.G., AA: S. Vigdergauz.
- 2009, Shaul Tayeb (MSc), Applied Mathematics Prog.
- 2010, Yoav Ofir (MSc), Dept. of Aero. Eng., PA: D.G., AA: A. Libai.
- 2010, Roman Reitbort (MSc), Dept. of Aero. Eng.
- 2010, Daniel Baffet (MSc), Applied Mathematics Prog., passed to PhD Direct Track.
- 2011, Ido Gur (MSc), Dept. of Aero. Eng.
- 2012, Clara Sussmann (MSc), Dept. of Aero. Eng., PA: D.G., AA: Y. Benveniste.
- 2013, Daniel Baffet (PhD), Applied Mathematics Prog.
- 2013, Izhak Levi (MSc), Dept. of Applied Mathematics, Tel-Aviv University, PA: Eli Turkel, AA: D.G.
- 2015, Israel Tuval (MSc), Dept. of Aero. Eng, PA: D.G., AA: E. Behar.
- 2017, Yoav Ofir (PhD), Applied Mathematics Prog.
- 2017, Yohan Kamun (MSc), Dept. of Aero. Eng.
- 2017, Hanan Amar (MSc), Dept. of Aero. Eng.
- 2017, Ritukesh Bharali (MSc), Dept. of Civil Eng. & Geosciences, Tech. U. of Delft, The Netherlands, PA: Bert Sluys, AA: D.G.
- 2018, Tomer Levin (MSc), Dept. of Applied Mathematics, Tel-Aviv University, PA: Eli Turkel, AA: D.G.
- 2020, Eyal Amitt (MSc+ direct PhD), Dept. of Aero. Eng.
- 2022, Adar Kahana (PhD), Dept. of Applied Mathematics, Tel-Aviv University, PA: Eli Turkel, AA: D.G.
- 2022, Fatin Kadmani (MSc), Dept. of Civil & Envir. Eng., PA: D.G., AA: O. Rabinovitch.

• 2024, Arie Zhakov (ME), Dept. of Aero. Eng.

### Theses in Progress:

- Amit Sayag (MSc), Dept. of Aero. Eng.
- Oded Ovadia (PhD), Dept. of Applied Mathematics, Tel-Aviv University, PA: Eli Turkel, AA: D.G.
- Yana Mayorov (MSc), Dept. of Aero. Eng.
- Gabriella Tankel (MSc), Dept. of Aero. Eng.

### POST-DOCTORAL RESEARCH ASSOCIATES

- Igor Patlashenko, 1995–96.
- Abigail Wacher (from UK, Lady Davis Fellowship), 2006–07.
- Dina Tsemach, 2007.
- Leonid Kucherov, 2010.
- Symeon Papadimitropoulos (from Greece, Technion Fellowship), 2018–2020.

#### RESEARCH GRANTS

- Israel Science Foundation (ISF) grant, 2020–24, \$308,000.
- Israel Science Foundation (ISF) grant, 2015–20, \$263,000.
- US-Israel Binational Science Foundation (BSF) grant, 2013–2018, \$107,000 (with J. Bielak, Carnegie Mellon, and T. Hagstrom, Southern Methodist University).
- Israel Science Foundation (ISF) grant, 2011–15, \$230,000.
- US-Israel Binational Science Foundation (BSF) grant, 2009–2013, \$80,000 (with J. Bielak, Carnegie Mellon, and T. Hagstrom, Southern Methodist University).
- Mafat grant, 2006–11, \$43,000 per year on average.
- Israel Science Foundation (ISF) grant, 2006–10, \$180,000.
- US-Israel Binational Science Foundation (BSF) grant, 2003–2007, \$80,000 (with T. Hagstrom, U. of New Mexico).
- US-Israel Binational Science Foundation (BSF) grant, 1998–2001, \$60,000 (with P. Barbone, Boston U.).
- Grant from the Adler Foundation for Space Research, managed by the Israeli Academy of Sciences, 1997–2000, \$62,000 (with O. Rand).
- Grant from the ESPRIT program of the European Community on High Performance Computing, 1997–98, Euro 15,000.
- Grant from the U. of Haifa-Technion Foundation for Joint Research, 1997–98, \$5000 (with L. Manevitz).
- US-Israel Binational Science Foundation (BSF) grant, 1993–96, \$54,000 (with J.B. Keller, Stanford U.).
- Grant from the U. of Haifa-Technion Foundation for Joint Research, 1992–93, \$4000 (with L. Manevitz).
- Grant from the Adler Foundation for Space Research, managed by the Israeli Academy of Sciences, 1991–93, \$30,000 (with O. Rand).
- Grant from the U. of Haifa-Technion Foundation for Joint Research, 1990–91, \$4000 (with L. Manevitz).
- Technion Research Grants: Peter Munk Research Institute (PMRI) fund (2020, 2022-23), Kaner and Sloan Research Fund (2020), Asher Space Research Fund (2011, 2014), Lena & Ben Fohrman Structures Research Fund (2011), The B.M. Gordon Center for Systems Engineering grant (2006), R.&M. Rosenthal Aerospace Eng. Research Fund (2003, 08), Aeronautical Eng. Research Fund (1997, 98), Seniel Ostrow

Research Fund (1997, 2006, 2010, 2013), Albert Fund for R&D in Aerospace Eng. (1997), J.&J. Gringorten Aeronautical Research Fund (1995, 2009), Fund for the Promotion of Research (1993–95, 97–99, 2004–09), K. Haber Applied Aerospace Research Fund (1990), L. Kraus Research Fund (1989–93, 98).

# VISITING GRANTS

- INRIA Travel Grant, POEMS group for wave research, Paris, 2012.
- Senior Research Associateship at the Naval Postgraduate School, Monterey, CA (for one year), from the US National Academy of Sciences, 2001–02.
- Invited Summer Guest of the Institute of Mathematics (FIM) at ETH, Zurich, 2000.
- Israel-Greece Exchange Scientist Travel Grant, from the Israeli Ministry of Science and Technology and the Greek Government, 1993.
- Travel Grant from U.S. Office of Naval Research (ONR) under the Visiting Scientist Program, 1990.

#### **LECTURES**

(Given by D.G. unless indicated differently)

# **Invited Conference Lectures:**

- POEMS/INRIA Wave Days Symposium (JO-2024), Paris, France, April 2024 (all talks plenary).
- 2023 Italian Conference on Applied & Industrial Math. (SIMAI-2023), Matera, Italy, Aug. 2023.
- 2023 ECCOMAS Conference on Computational Dynamics (COMPDYN-2023), Athens, Greece, June 2023 (keynote).
- Int. Conf. on Coupled Problems in Science & Eng. (COUPLED-2023), Heraklion, Greece, June 2023, speaker: D. Rabinovich.
- Word Congress on Computational Mechanics (WCCM-APCOM-2022), Online, July 2022 (2 talks, speakers A. Sayag and R. Efrati).
- European Congress on Computational Methods (ECCOMAS-2022), Oslo, Norway, June 2022.
- IUTAM Symposium on Computational methods for large-scale and complex wave problems, Tokyo (online), July 2021 (all talks plenary).
- SIAM Conf. on Math. & Comp. Issues in the Geosciences, Milan, Italy, June 2021 (speaker: S. Papadimitropoulos).
- 8th ECCOMAS Conference on Computational Dynamics (COMPDYN-2021), Athens (online), June 2021 (speaker: F. Kadmani).
- Int. Conf. on Multiscale Modeling in Fluid Mechanics & Fluid-Structure Interaction, Vilnius, Lithuania, 2019 (all talks plenary).
- 14th Int. Conf. on Mathematical and Numerical Aspects of Wave Propagation (WAVES-2019), Vienna, Austria, 2019 (2 talks, speakers DG and A. Kahana).
- 13th Word Congress on Computational Mechanics (WCCM-2018), New York, NY, July 2018 (2 talks, one of them semi-plenary).
- 2018 Int. Conference on Spectral and High-Order Methods (ICOSAHOM-2018), London, UK, July, 2018 (Speaker: Y. Ofir).
- 6th European Conf. on Computational Mechanics (ECCM-2018), Glasgow, UK, June 2018 (two talks, speakers: H. Amar, T. Levin).
- 13th Int. Conf. on Theoretical & Computational Acoustics (ICTCA-2017), Vienna, Austria, July 2017 (Plenary).

- 13th Int. Conf. on Theoretical & Computational Acoustics (ICTCA-2017), Vienna, Austria, July 2017 (speaker: H. Amar).
- 7th Int. Conference on Coupled Problems (COUPLED-2017), Rhodes, Greece, June 2017 (speaker: Y. Ofir).
- 6th ECCOMAS Conference on Computational Dynamics (COMPDYN-2017), Rhodes, Greece, June 2017 (speaker: Y. Ofir).
- ECCOMAS Congress 2016 (ECCOMAS-2016), Crete, Greece, June 2016 (Semi-Plenary).
- 5th Workshop of the Israel Structural Integrity Group (ISIG), Tel-Aviv, Israel, Jan. 2016.
- 5th ECCOMAS Conference on Computational Dynamics (COMPDYN-2015), Crete, Greece, May 2015.
- Workshop on Structural Health Monitoring, IAI, Lod, Israel, Oct. 2014.
- 11th Word Congress on Computational Mechanics (WCCM-2014), Barcelona, Spain, July 2014.
- 11th Int. Conf. on Theoretical & Computational Acoustics (ICTCA), College Station, Texas, March 2014.
- 5th Int. Conf. on Coupled Problems (Coupled-2013), Ibiza, Spain, June 2013 (Speaker: Y. Ofir).
- 3rd Workshop on Underwater Acoustics, Tel Aviv, June 2013.
- 4th ECCOMAS Conference on Computational Dynamics (COMPDYN-2013), Kos, Greece, June 2013 (Semi-plenary).
- EUROMECH Colloquium on Advanced Modelling of Wave Propagation in Solids, Prague, 2012.
- ECCOMAS-2012 Congress, Vienna, 2012 (Keynote).
- 8th European Solid Mechanics Conference (ESMC-2012), Graz, Austria, 2012 (Keynote).
- Workshop on Wave Propagation in Complex Media, Heraklion, Greece, 2012.
- XFEM-2011, Cardiff, UK, 2011 (Keynote).
- The 2012 Seminar for Leading Teachers of Computer Science, Technion, Haifa, 2012.
- The Moshe Israeli Memorial Symposium, Technion, Haifa, 2012.
- 3rd ECCOMAS Conference on Computational Dynamics (COMPDYN-2011), Corfu, Greece, 2011 (Keynote).
- 2nd ECCOMAS Conference on Computational Dynamics (COMPDYN-09), Rhodes, Greece, 2009 (Semi-plenary).
- 9th Int. Conf. on Mathematical and Numerical Aspects of Wave Propagation (WAVES-09), Pau, France, 2009
- Caesarea Rotschild Institute (CRI) Review Day, Haifa, 2008.
- 4th Int. Conf. of Applied Mathematics and Computing, Plovdiv, Bulgaria, 2007.
- 9th US National Congress on Computational Mechanics, San Francisco, CA, 2007.
- 8th Int. Conf. on Theoretical & Computational Acoustics (ICTCA), Heraklion, Crete, July 2007.
- ECCOMAS Conference on Computational Dynamics (COMPDYN), Rethymno, Crete, July 2007 (speaker: D. Rabinovich).
- 14th Int. Conf. on Finite Elements in Flow Problems (FEF-2007), Santa Fe, New Mexico, US, March 2007 (speaker: T. Hagstrom).
- 8th Int. Conf. on Computational Structures Technology, Gran Canaria, Spain, Sept. 2006 (Keynote).
- 7th World Congress on Computational Mechanics, Los Angeles, July 2006.
- 5th Israeli Applied Math Workshop, Technion, June 2006.
- 7th Int. Conf. on Theoretical & Computational Acoustics (ICTCA-7), Hangzhou, China, Sept. 2005 (Opening Plenary).

- 8th US National Congress on Computational Mechanics (USNCCM8), Austin, Texas, July 2005 (Keynote).
- SPICE, Special Research and Training EU Workshop on Geophysical Waves, Venice, Sept. 2004 (Plenary).
- ECCOMAS-04 Conf. on Numerical Methods in Engineering, Jyväskylä, Finland, July 2004 (Speaker: A. Mar-Or).
- 12th Int. Conference on Computational Engineering & Sciences (ICCES-04), Madeira, Portugal, July 2004 (Keynote).
- 12th Int. Conference on Computational Engineering & Sciences (ICCES-04), Madeira, Portugal, July 2004.
- 6th Int. Conference on Spectral and High-Order Methods (ICOSAHOM-04), Brown University, Providence, RI, June, 2004 (Speaker: V. van Joolen).
- 6th Int. Conference on Mathematical and Numerical Aspects of Wave Propagation (WAVES-03), Jyväskylä, Finland, June 2003 (Plenary).
- Joint France-Israel Workshop in Applied Mathematics & Scientific Computing, Jerusalem, Feb. 2003.
- 28th Israel Conference on Mechanical Engineering, Beer-Sheba, June 2000 (Keynote).
- IUTAM Symp. on Computational Methods for Unbounded Domains, Boulder, CO, USA, July 1997.
- 2nd Israel Symposium on Computational Mechanics (ISCM-2), Tel Aviv University, Tel Aviv, Oct. 1996 (Keynote).
- 1996 SIAM Annual Meeting, Kansas City, MO, USA, July 1996.
- Workshop on Numerical Boundary Treatment, Tel-Aviv University, Nov. 1993.
- Workshop in Geophysical Fluid Dynamics, Woods Hole Oceanographic Institute, MA, USA, July 1990.

### **Invited Course Lectures:**

• A series of 6 lectures, Course in Computational Acoustics, Int. Center for Mechanical Sciences (CISM), Udine, Italy, May 2016.

# Contributed Conference Lectures:

- 7th Annual Applied Mechanics Affiliates Meeting, Stanford University, California, April 1987.
- 8th Annual Applied Mechanics Affiliates Meeting, Stanford University, California, May 1988.
- 17th Congress of Theoretical and Applied Mechanics, IUTAM, Grenoble, France, August 1988.
- 1988 SIAM Annual Meeting, Minneapolis, Minnesota, July 1988.
- 30th Israel Conf. on Aviation and Astronautics, Haifa, Israel, Feb. 1989.
- 23rd Israel Conf. on Mechanical Engineering, Haifa, May 1990.
- 1990 SIAM Annual Meeting, Chicago, Illinois, July 1990.
- 2nd World Congress on Computational Mechanics, Stuttgart, Germany, Aug. 1990.
- 17th ICAS Congress, Stockholm, Sweden, Sept. 1990, speaker: O. Rand.
- 6th Int. Conf. on Applications of Statistics and Probabilities in Civil Engineering, Mexico City, Mexico, June 1991, speaker: I. Elishakoff.
- 1991 ASME Winter Annual Meeting, Atlanta, Georgia, Dec. 1991, speaker: I. Elishakoff.
- 1st Int. Conf. on Mathematical and Numerical Aspects of Wave Propagation Phenomena, Strasbourg, France, April 1991.
- 32nd Israel Conf. on Aviation and Astronautics, Haifa, Feb. 1992.
- 1992 SIAM Annual Meeting, Los Angeles, CA, July 1992. (two lectures).

- 18th Congress of Theoretical and Applied Mechanics, IUTAM, Haifa, Israel, August 1992.
- 18th ICAS Congress, Beijing, China, Sept. 1992, speaker: O. Rand.
- Symp. on Foundations of Artif. Intell. (BISFAI-93), Israel, June 1993, speaker: L. Manevitz.
- 1st Int. Conf. on Theoretical and Computational Acoustics, Mystic, CT, July 1993.
- 25th Israel Conf. on Mechanical Engineering, Haifa, May 1994, speakers: D.G. and I. Doukhovni (two lectures).
- 3rd World Congress on Computational Mechanics, Chiba, Japan, Aug. 1994 (two lectures).
- 3rd Int. Conf. on Mathematical and Numerical Aspects of Wave Propagation Phenomena, Mandelieu, France, April 1995.
- 2nd Int. Conf. on Theoretical and Computational Acoustics, Honolulu, Hawaii, Aug. 1995, speaker: I. Patlashenko.
- Symp. on Foundations of Artif. Intell. (BISFAI-95), Israel, June 1995, speaker: M. Yousef.
- 2nd ECCOMAS Conf. on Numerical Methods in Engineering, Paris, Sept. 1996.
- 12th Israeli Symposium on Artificial Intelligence, Computer Vision and Neural Networks, Tel Aviv, Feb. 1996, speaker: M. Yousef.
- 10th American Conf. on Crystal Growth, Vail, CO, Aug. 1996.
- 2nd Int. Workshop on Modelling in Crystal Growth, Durbuy, Belgium, Oct. 1996.
- 1997 ASME Winter Annual Meeting, Dallas, Texas, Nov. 1997, speaker: O. Rand.
- 4th US National Congress on Computational Mechanics, San Francisco, CA, Aug. 1997. (two lectures) and S. Adjerid (one lecture).
- 1997 AIChE Annual Meeting, Los Angeles, CA, Nov. 1997, speaker: J.E. Flaherty.
- 1998 Int. Symposium on Mathematics and Artificial Intelligence, Fort Lauderdale, Jan. 1998, speaker: L. Manevitz.
- 38th Israel Annual Conf. on Aerospace Sciences (IACAS-1998), Tel Aviv, Feb. 1998.
- 4th Int. Conf. on Spectral and High Order Methods, Hertzelia, June 1998.
- 4th World Congress on Computational Mechanics, Buenos Aires, July 1998. (two lectures).
- 12th Int. Conf. on Crystal Growth, Jerusalem, July 1998.
- 7th Israel Symposium on Computational Mechanics, Ben-Guryon University, Beer Sheba, April 1999, speaker: T. Demchenko.
- 4th Int. Conf. on Theoretical and Computational Acoustics, Trieste, Italy, May 1999.
- Annual Meeting of the Israel Mathematical Union (IMU), Haifa, May 1999.
- The 1999 Conf. on The Mathematics of Finite Elements and Applications (MAFELAP), Brunel University, England, June 1999.
- 40th Israel Annual Conf. on Aerospace Sciences (IACAS-2000), Haifa, Feb. 2000, speaker: L. Rivkin.
- 22nd ICAS Congress, Harrogate, UK, Aug. 2000.
- ECCOMAS-2000: Conf. on Numerical Methods in Engineering, Barcelona, Sept. 2000.
- Symp. on Foundations of Artif. Intell. (BISFAI-01), Israel, June 2001, speaker: A. Bitar.
- 6th US National Congress on Computational Mechanics, Dearborn, MI, Aug. 2001.
- US National Research Council (NRC) Associates Meeting, Monterey, CA, Oct. 2001.
- 1st Int. Conf. on Computational & Mathematical Methods in Sciences and Engineering, Alicante, Spain, Sept. 2002, speaker: B. Neta.

- Annual Meeting of the the Israel Society for Theoretical and Applied Mechanics, Tel-Aviv, Dec. 2002.
- 43rd Israel Annual Conf. on Aerospace Sciences (IACAS-2003), Haifa, Feb. 2003, speaker: R. Zusman.
- 6th Int. Conf. Coastal Engineering, Cadiz, Spain, June 2003, speaker: B. Neta.
- Int. Conf. on Structural Membranes, Barcelona, Spain, June 2003, speaker: A. Libai.
- 7th US National Congress on Computational Mechanics, Albuquerque, NM, July 2003.
- 15th Israel Symposium on Computational Mechanics (ISCM-2003), Tel-Aviv U., Oct. 2003.
- Annual Meeting of the the Israel Society for Theoretical and Applied Mechanics, Tel-Aviv, Dec. 2003, speaker: A. Libai.
- 4th Joint Faculty Air-Force Symp. on Flight Sciences, Dept. of Aerospace Eng., Technion, April 2004.
- 17th Israel Symposium on Computational Mechanics (ISCM-2004), Ben-Gurion U., Oct. 2004, speaker: A. Mar-Or.
- 21st Israel Symposium on Computational Mechanics (ISCM-2006), Ben-Gurion U., Oct. 2006.
- 47th Israel Annual Conf. on Aerospace Sciences (IACAS-2007), Haifa, Feb. 2007, speaker: D. Rabinovich.
- 22nd Israel Symposium on Computational Mechanics (ISCM-2007), Technion, Haifa, March 2007.
- 6th Int. Congress on Industrial & Applied Mathematics, Zurich, Switzerland, July 2007, speaker: A. Wacher.
- 8th Int. Conf. on Mathematical & Numerical Aspects of Waves (WAVES-07), Reading, UK, July 2007, speaker: A. Mar-Or.
- 8th Int. Conf. on Theoretical & Computational Acoustics (ICTCA), Heraklion, Crete, July 2007, speaker: D. Rabinovich.
- 18th Int. Conf. on Domain Decomposition Methods (DD18), Jerusalem, Jan. 2008, speaker: A. Mar-Or.
- 2nd Symposium on Systems Engineering, Technion, Jan. 2008.
- 48th Israel Annual Conf. on Aerospace Sciences (IACAS-2008), Tel Aviv, Feb. 2008, two lectures, speakers: I. Gur, D. Givoli.
- 8th World Congress on Computational Mechanics (WCCM-8) and ECCOMAS-2008, Venice, Italy, June 2008
- 2008 ASME Int. Conf. on Eng. Systems Design and Analysis (ESDA-2008), Haifa, July 2008, speaker: D. Rabinovich.
- 25th Israel Symp. on Comput. Mech. (ISCM-2008), Beer Sheva, Oct. 2008, speakers: I. Gur, D. Rabinovich.
- 9th Int. Conf. on Theoretical & Computational Acoustics (ICTCA), Dresden, Germany, Sept. 2009.
- 2nd ECCOMAS Conference on Computational Dynamics (COMPDYN-09), Rhodes, Greece, June 2009.
- 8th Int. Conf. on Spectral and High-order Methods (ICOSAHOM-09), Trondheim, Norway, June 2009, speaker: T. Hagstrom.
- 4th European Conf. on Computational Mechanics (ECCM-2010), Paris, France, May 2010.
- 9th World Congress on Computational Mechanics (WCCM-9), Sydney, Australia, July 2010, speaker: J. Bielak.
- 10th Int. Conf. on Computational Structures Technology (CST-2010), Valencia, Spain, Sept. 2010, speaker: C. Sussmann.
- 51st Israel Annual Conf. on Aerospace Sciences (IACAS-2011), Tel Aviv, Feb. 2011, two lectures, speakers: I. Gur, C. Sussmann.
- 10th Int. Conf. on Theoretical & Computational Acoustics (ICTCA), Taipei, Taiwan, April 2011, speaker: G. Seriani.

- Joint Faculty Air-Force Symp. on Flight Sciences, Dept. of Aerospace Eng., Technion, May 2011.
- Symposium on Space Research of the Asher Institute, Technion, Dec. 2011.
- 52nd Israel Annual Conf. on Aerospace Sciences (IACAS-2012), Tel Aviv, Feb. 2012, speaker: C. Sussmann.
- 34th Israel Symp. on Comput. Mech. (ISCM-34), Tel Aviv, April 2013.
- 33rd Int. Conf. on Aeronautical Fatigue (ICAF-2013), Jerusalem, June 2013.
- 4th ECCOMAS Conference on Computational Dynamics (COMPDYN-2013), Kos, Greece, June 2013.
- Conf. on Mathematical Modeling (JBK90), Lausanne, Switzerland, Aug. 2013.
- 35th Israel Symp. on Comput. Mech. (ISCM-35), Beer Sheva, Oct. 2013, speaker: Y. Ofir.
- 54th Israel Annual Conf. on Aerospace Sciences (IACAS-2014), Haifa, Feb. 2014, speaker: Y. Ofir.
- 3rd Int. Conf. on Computational Methods for Thermal Problems (ThermaComp-2014), Slovenia, June 2014, speaker: I. Tuval.
- 12th Int. Conf. on Computational Structures Technology (CST-2014), Naples, Italy, Sept. 2014, speaker: Y. Ofir.
- Symposium on Space Structures and Materials, Asher Institute, Technion, Feb. 2015, speaker: I. Tuval.
- 55th Israel Annual Conf. on Aerospace Sciences (IACAS-2015), Tel Aviv, Feb. 2015, speaker: Y. Kamoun.
- 33rd Israel Conf. on Mechanical Engineering (ICME-2015), Tel Aviv, March 2015, two lectures, speakers: I. Tuval, Y. Ofir.
- 6th Int. Conf. on Coupled Problems (Coupled-2015), Venice, Italy, May 2015, speaker: Y. Ofir.
- 12th Int. Conf. on Mathematical and Numerical Aspects of Wave Propagation (WAVES-2015), Karlsruhe, Germany, July 2015.
- 57th Israel Annual Conf. on Aerospace Sciences (IACAS), Tel Aviv & Haifa, Feb. 2017 (speaker: Y. Ofir).
- 42nd Israel Symp. on Comput. Mech. (ISCM-42), Technion, March 2017, speaker: H. Amar.
- 48th Israel Symp. on Comput. Mech. (ISCM-48), Technion, Nov. 2021, speaker: A. Kahana.
- 49th Israel Symp. on Comput. Mech. (ISCM-49), Beer Sheva, March 2022, speaker: A. Sayag.
- 62nd Israel Annual Conf. on Aerospace Sciences (IACAS-2023), Tel Aviv, March 2023, two lectures, speakers: R. Efrati and F. Kadmany.
- 51st Israel Symp. on Comput. Mech. (ISCM-51), Haifa, March 2023.
- 2023 ECCOMAS Conference on Computational Dynamics (COMPDYN-2023), Athens, Greece, June 2023, speaker: A. Sayag.

# **Selected Guest Lectures:**

- Stanford University, Div. of Applied Mechanics, "Matching Analytic and Numerical Solutions of Large Domain Problems," April 1988.
- Stanford University, Dept. of Mathematics, "Numerical Methods for Infinite and Singular Domains," Oct. 1994.
- Rensselaer Polytechnic Institute, Dept. of Computer Science, "DtN Methods for Infinite and Singular Domains," Sept. 1995.
- Boston University, Dept. of Aerospace and Mechanical Engineering, "Numerical Methods for Unbounded and Singular Domains," March 1996.
- Chicago University, Dept. of Physics, "Advances in Numerical Methods for Unbounded and Singular Domains," April 1996.

- U. of Illinois at Chicago, Dept. of Civil and Materials Engineering, "Advances in Numerical Methods for Unbounded and Singular Domains," April 1996.
- Naval Postgraduate School, Monterey, CA, Dept. of Applied Mathematics, "High Accuracy Computations in Infinite Domains," Oct. 2001.
- Navy Research Lab (NRL), Monterey, CA, "How to Prevent the Boundary from Making Waves," Oct. 2001.
- University of California, Santa Cruz, Dept. of Applied Mathematics, "High-Accuracy Computations in Infinite and Singular Domains," Nov. 2001.
- Stanford University, Div. of Mechanics and Computation, "Models of Limited Domain in Computational Mechanics," March 2002.
- U. of California, Berkeley, Dept. of Civil Engineering, "Models of Limited Domain in Computational Mechanics," March 2002.
- Naval Postgraduate School, Monterey, CA, Dept. of Mechanical Engineering, "Models of Limited Domain (MOLDs)," May 2002.
- Sandia National Laboratories, New Mexico, "Absorbing and Open Boundaries," Aug. 2007.
- Cardiff University, Dept. of Applied Mathematics, Wales, UK, "Optimal Model Reduction of Dynamic Subsystems Recent Advances," Sept. 2011.
- U. of Michigan, Dept. of Aerospace Engineering, Ann Arbor, "Inverse Wave Problems and Identifying Flaws in Aerospace Structures," April 2013.
- Politecnico di Torino, Dept. of Applied Mathematics, Torino, Italy, "Time Reversal: Basics, and Flaw Identification," Sept. 2013.
- Warren Memorial Lecture, U. of Minnesota, Dept. of Civil, Envir. & Geo. Eng., Minneapolis, "Inverse Wave Problems, Time Reversal and Identifying Structural Damage," April 2015.
- U. of Stuttgart, Dept. of Mechanical Eng., Stuttgart, Germany, "Inverse Wave Problems, Time Reversal and Identifying Structural Damage," July 2015.
- Stanford U., Seminar in Applied Mathematics, "How to Do Nothing at the Boundary, and Very Accurately So," Oct. 2015.
- Stanford U., Seminar in Mechanics & Computation, "Inverse Problems, Time Reversal and Damage Identification," Oct. 2015.
- TU Delft, Dept. of Civil Eng. & Geosciences, "How to Do Nothing at the Boundary, and Very Accurately So," April 2016.
- TU Delft, Dept. of Aerospace Eng., "Identifying Structural Damage Using Time Reversal," April 2016.
- IIT Kanpur, Dept. of Mechanical Eng., "Time-Dependent Wave-Based Obstacle Identification Methods," Oct. 2020 (online).
- Technical University of Munich, Dept. of Civil, Geo & Envir. Eng., "Mixed-Dimensional Modeling for Time-Dependent Waves,", April 2023.
- Interuniversity Institute for Marine Sciences, Eilat, "Inverse Wave Problems: in the Sea, in the Solid Earth, and Elsewhere," Jan. 2024.

### Popular Science Lectures:

- Technion's Math Club, "Computational Mechanics and the Finite Element Method," April 2008.
- A pub talk, in the series 'Science on the Bar', Nola Socks Pub, Haifa, "Seeing the Future with 10 GFLOPS," Dec. 2015.
- Technion's Applied Math Exposure seminar: "Inverse Problems," Nov. 2022.

### **PUBLICATIONS**

### 1. Theses

- "A Finite Element Method for Dynamic Moving Boundary Problems," M.Sc. Thesis, Department of Mechanics, Materials and Structures, School of Engineering, Tel Aviv University, 1985.
- "A Finite Element Method for Large Domain Problems," Ph.D. Thesis, Division of Applied Mechanics, Stanford University, 1988.

# 2. Book

D. Givoli, Numerical Methods for Problems in Infinite Domains, published by Elsevier Science Publishers, Amsterdam, 300 p., 1992.

# 3. Research Journal Papers, Published or Accepted for Publication

- [1] D. Givoli and I. Levit, "A solution of One-Dimensional Moving Boundaries Problems by the Finite Element Method," Computers and Structures, Vol. 24, No. 2, pp. 273–280, 1986.
- [2] D. Givoli, "Non-Local and Semi-Local Weighting Functions For Symmetric Problems Involving a Small Parameter," Int. J. for Numerical Methods in Engineering, Vol. 26, pp. 1281–1298, 1988.
- [3] J.B. Keller and D. Givoli, "Exact Non-Reflecting Boundary Conditions," J. of Computational Physics, Vol. 82, No. 1, pp. 172–192, 1989.
- [4] D. Givoli and J.B. Keller, "A Finite Element Method for Large Domains," Computer Methods in Applied Mechanics and Engineering, Vol. 76, pp. 41–66, 1989.
- [5] D. Givoli, "A Combined Analytic-Finite Element Method for Elastic Shells," Int. J. of Solids and Structures, Vol. 26, pp. 185–198, 1990.
- [6] D. Givoli, "Stresses in an Ablating Cylinder," J. of Thermal Stresses, Vol. 13, No. 3, pp. 263–279, 1990.
- [7] D. Givoli, "Finite Element Analysis of Long Cylindrical Shells," AIAA Journal, Vol. 28, pp. 1331–1333, 1990.
- [8] O. Rand and D. Givoli, "A Finite Element Spectral Method with Application to the Thermoelastic Analysis of Space Structures," Int. J. for Numerical Methods in Engineering, Vol. 30, 291–306, 1990.
- [9] D. Givoli and J.B. Keller, "Non-Reflecting Boundary Conditions for Elastic Waves," Wave Motion, Vol. 12, pp. 261–279, 1990.
- [10] D. Givoli and O. Rand, "Thermoelastic Analysis of Space Structures in Periodic Motion," AIAA J. Spacecraft and Rockets, Vol. 28, pp. 457–464, 1991.
- [11] D. Givoli and L. Rivkin, "A Finite Element Scheme Based on the Simplified Reissner Equations for shells of Revolution," Computer Methods in Applied Mechanics and Engineering, Vol. 93, pp. 111–124, 1991.
- [12] D. Givoli and I. Elishakoff, "Stress Concentration at a Nearly Circular Hole With Uncertain Irregularities," ASME J. of Applied Mechanics, Vol. 59, pp. S65–S71, 1992.
- [13] D. Givoli, I. Elishakoff and Y. Stavsky, "A Boundary-Perturbation Finite-Element Method for Plane Elasticity Problems," Computer Methods in Applied Mechanics and Engineering, Vol. 96, pp. 45–63, 1992.
- [14] D. Givoli, "A Spatially Exact Non-Reflecting Boundary Condition for Time Dependent Problems," Computer Methods in Applied Mechanics and Engineering, Vol. 95, pp. 97–113, 1992.
- [15] O. Rand and D. Givoli, "Thermal Analysis of Space Structures Including Three-Dimensional Effects," Int. J. of Numerical Methods for Heat and Fluid Flow, Vol. 2, pp. 115–125, 1992.
- [16] D. Givoli, "A Numerical Solution Procedure for Exterior Wave Problems," Computers and Structures, Vol. 43, pp. 77–84, 1992.

- [17] D. Givoli, L. Rivkin and J.B. Keller, "A Finite Element Method for Domains With Corners," Int. J. for Numerical Methods in Engineering, Vol. 35, pp. 1329–1345, 1992.
- [18] D. Givoli and O. Rand, "Harmonic Finite Element Thermoelastic Analysis of Space Frames and Trusses," J. of Thermal Stresses, Vol. 16, pp. 233–248, 1993.
- [19] D. Givoli and I. Henigsberg, "A Simple Time-Step Control Scheme," Communications in Numerical Methods in Engineering, Vol. 9, pp. 873–881, 1993.
- [20] D. Givoli, "Use of the Kirchhoff Transformation in Finite Element Analysis," Int. J. of Numerical Methods for Heat and Fluid Flow, Vol. 3, pp. 473–479, 1993.
- [21] L. Manevitz, D. Givoli and M. Margi, "Heuristic Finite Element Node Numbering," Computing Systems in Engineering, Vol. 4, pp. 159–167, 1993.
- [22] D. Givoli and S. Vigdergauz, "Artificial Boundary Conditions for 2D Problems in Geophysics," Computer Methods in Applied Mechanics and Engineering, Vol. 110, pp. 87–101, 1993.
- [23] D. Givoli and L. Rivkin, "The DtN Finite Element Method for Elastic Domains with Cracks and Reentrant Corners," Computers and Structures, Vol. 49, pp. 663–642, 1993.
- [24] D. Givoli and S. Vigdergauz, "Finite Element Analysis of Wave Scattering from Singularities," Wave Motion, Vol. 20, pp. 165–176, 1994.
- [25] D. Givoli and J.B. Keller, "Special Finite Elements for use with High-order Boundary Conditions," Computer Methods in Applied Mechanics and Engineering, Vol. 119, pp. 199–213, 1994.
- [26] O. Rand and D. Givoli, "Reduction of the Periodic Thermoelastic Deformation in Truss Structures by Design Refinements and Active Loads," Computers and Structures, Vol. 54, pp. 757–765, 1995.
- [27] D. Givoli and D. Cohen, "Non-reflecting Boundary Conditions Based on Kirchhoff-type Formulae," J. of Computational Physics, Vol. 117, pp. 102–113, 1995.
- [28] D. Givoli and O. Rand, "Dynamic Thermoelastic Coupling Effects in a Rod," AIAA Journal, Vol. 33, pp. 776–778, 1995.
- [29] A. Libai and D. Givoli, "Incremental Stresses in Loaded Orthotropic Circular Membrane Tubes. I: Theory," Int. J. Solids and Structures, Vol. 32, pp. 1907–1925, 1995.
- [30] D. Givoli and A. Libai, "Incremental Stresses in Loaded Orthotropic Circular Membrane Tubes. II: Numerical Solution," Int. J. Solids and Structures, Vol. 32, pp. 1927–1947, 1995.
- [31] G. Ben-Porat and D. Givoli, "Solution of Unbounded Domain Problems Using Elliptic Artificial Boundaries," Communications in Numerical Methods in Engineering, Vol. 11, pp. 735–741, 1995.
- [32] D. Givoli and O. Rand, "Minimization of the Thermoelastic Deformation in Space Structures Undergoing Periodic Motion," AIAA J. of Spacecraft and Rockets, Vol. 32, pp. 662–669, 1995.
- [33] I. Patlashenko and D. Givoli, "Nonlocal and Local Artificial Boundary Conditions for Two-dimensional Flow in an Infinite Channel," Int. J. Numerical Methods for Heat and Fluid Flow, Vol. 6, pp. 47–62, 1996.
- [34] I. Doukhovni and D. Givoli, "Quadratic Programming Algorithms for Obstacle Problems," Communications in Numerical Methods in Engineering, Vol. 12, pp. 249–256, 1996.
- [35] D. Givoli and I. Doukhovni, "Finite Element-Quadratic Programming Approach for Contact Problems with Geometrical Nonlinearity," Computers and Structures, Vol. 61, pp. 31–41, 1996.
- [36] A. Rosen, M. Sabag and D. Givoli, "A General Nonlinear Structural Model of a Multirod (Multibeam) System —I. Theoretical Derivations," Computers and Structures, Vol. 61, pp. 617–632, 1996.
- [37] D. Givoli, J.E. Flaherty and M.S. Shephard, "Simulation of Czochralski Melt Flows Using Parallel Adaptive Finite Element Procedures," Modelling and Simulation in Material Science and Engineering, Vol. 4, pp. 623–639, 1996.
- [38] D. Givoli, I. Patlashenko and J.B. Keller, "High order Boundary Conditions and Finite Elements for Infinite Domains," Computer Methods in Applied Mechanics and Engineering, Vol. 143, pp. 13–39, 1997.

- [39] I. Patlashenko and D. Givoli, "Non-Reflecting Finite Element Schemes for Three-Dimensional Acoustic Waves," J. Computational Acoustics, Vol. 5, pp. 95–115, 1997.
- [40] D. Givoli, J.E. Flaherty and M.S. Shephard, "Parallel Adaptive 3D Finite Element Analysis of CZ Melt Flows," J. Crystal Growth, Vol. 174, pp. 1–6, 1997.
- [41] L. Manevitz, M. Yousef and D. Givoli, "Finite Element Mesh Generation Using Self-Organizing Neural Networks," Microcomputers in Civil Engineering, Vol. 12, pp. 233–250, 1997.
- [42] D. Givoli, J.E. Flaherty and M.S. Shephard, "Analysis of InP LEC Melt Flows Using a Parallel Adaptive Finite Element Scheme," J. Crystal Growth, Vol. 180, pp. 510–516, 1997.
- [43] D. Givoli, J.E. Flaherty and M.S. Shephard, "Parallel Adaptive Finite Element Analysis of Viscous Flows Based on a Combined Compressible-Incompressible Formulation," Int. J. Numerical Methods for Heat and Fluid Flow, Vol. 7, pp. 880–906, 1997.
- [44] I. Patlashenko and D. Givoli, "A Numerical Method for Problems in Infinite Strips with Irregularities Extending to Infinity," Numerical Methods for Partial Differential Equations, Vol. 14, pp. 233–249, 1998.
- [45] D. Givoli and I. Patlashenko, "Finite Element Schemes for Nonlinear Problems in Infinite Domains," Int. J. Numerical Methods in Engineering, Vol. 42, pp. 341–360, 1998.
- [46] D. Givoli and I. Patlashenko, "Finite Element Solution of Nonlinear Time-Dependent Exterior Wave Problems," J. Computational Physics, Vol. 143, pp. 241–258, 1998.
- [47] I. Harari, I. Patlashenko and D. Givoli, "Dirichlet-to-Neumann Maps for Unbounded Wave Guides," J. Computational Physics, Vol. 143, pp. 200–223, 1998.
- [48] F.S. Yaacobson and D. Givoli, "An Adaptive Finite Element Procedure for the Image Segmentation Problem," Communications in Numerical Methods in Engineering, Vol. 14, pp. 621–632, 1998.
- [49] D. Givoli and I. Patlashenko, "Optimal Local Non-Reflecting Boundary Conditions," Applied Numerical Mathematics, Vol. 27, pp. 367–384, 1998.
- [50] D. Givoli, I. Patlashenko and J.B. Keller, "Discrete Dirichlet-to-Neumann Maps for Unbounded Domains," Computer Methods in Applied Mechanics & Engineering, Vol. 164, pp. 173–185, 1998.
- [51] S. Vigdergauz and D. Givoli, "Thermoelastic Stresses in a Cylinder or Disk with Cubic Anisotropy," Int. J. Solids and Structures, Vol. 36, pp. 2109–2125, 1999.
- [52] D. Givoli and O. Rand, "Generalized Finite Element Harmonic Analysis for Nonlinear Heat Transfer," AIAA Journal of Thermophysics and Heat Transfer, Vol. 13, pp. 100–109, 1999.
- [53] S. Vigdergauz and D. Givoli, "Thermoelastic Stresses in a Crystal with Weak Anisotropy," J. Crystal Growth, Vol. 198/199, pp. 125–128, 1999.
- [54] D. Givoli, "A Direct Approach to the Finite Element Solution of Elliptic Optimal Control Problems," Numerical Methods for Partial Differential Equations, Vol. 15, pp. 371-388, 1999.
- [55] D. Givoli, "Scattering Matrix of a Nearly Circular Cylinder," Wave Motion, Vol. 30, pp. 239–251, 1999.
- [56] D. Givoli and T. Demchenko, "A Boundary Perturbation Finite Element Approach for Shape Optimization," Int. J. Numerical Methods in Engineering, Vol. 47, pp. 801–819, 2000.
- [57] A. Sidi and D. Givoli, "Stability and Accuracy of Optimal Local Non-Reflecting Boundary Conditions," Applied Numerical Mathematics, Vol. 33, pp. 327–340, 2000.
- [58] L. Rivkin and D. Givoli, "An Efficient Finite Element Scheme for Viscoelasticity with Moving Boundaries," Computational Mechanics, Vol. 24, pp. 503–512, 2000.
- [59] I. Patlashenko and D. Givoli, "Optimal Local Non-Reflecting Boundary Conditions for Time-Dependent Waves," J. Computational Acoustics, Vol. 8, pp. 157–170, 2000.
- [60] I. Patlashenko and D. Givoli, "Numerical Solution of Nonlinear Exterior Wave Problems Using Local Absorbing Boundary Conditions," Computer Modeling in Engineering & Sciences, Vol. 1, pp. 61–69, 2000.
- [61] D. Givoli and I. Patlashenko, "Solution of Static Optimal Control Problems in Nonlinear Elasticity via Quadratic Programming," Communications in Numerical Methods in Engineering, Vol. 16, pp. 877–890,

2000.

- [62] O. Rand and D. Givoli, "A Harmonic Finite Element Analysis for Anisotropic Viscoelasticity," AIAA Journal, Vol. 39, pp. 349–352, 2001.
- [63] L. Peres-Hari, D. Givoli and J. Rubinstein, "Computation of Willmore-Type Surfaces," Applied Numerical Mathematics, Vol. 37, pp. 257–269, 2001.
- [64] I. Patlashenko, D. Givoli and P. Barbone, "Time-Stepping Schemes for Systems of Volterra Integro-Differential Equations," Computer Methods in Applied Mechanics and Engineering, Vol. 190, pp. 5691–5718, 2001.
- [65] D. Givoli, "High-Order Non-Reflecting Boundary Conditions Without High-Order Derivatives," J. Computational Physics, Vol. 170, pp. 849–870, 2001.
- [66] A. Libai and D. Givoli, "Analysis of Pulled Axisymmetric Membranes with Wrinkling," Int. J. Solids & Structures, Vol. 39, pp. 1259–1274, 2002.
- [67] D. Givoli and I. Patlashenko, "An Optimal High-Order Non-Reflecting Finite Element Scheme for Wave Scattering Problems," Int. J. Numerical Methods in Engineering, Vol. 53, pp. 2389–2411, 2002.
- [68] D. Givoli and R. Zusman, "An Adaptive Finite Element Framework for Fatigue Crack Propagation," Int. J. Numerical Methods in Engineering, Vol. 54, pp. 111–135, 2002.
- [69] I. Patlashenko and D. Givoli, "Optimal Control of Radiating Panels via Sequential Quadratic Programming," Int. J. Numerical Methods for Heat and Fluid Flow, Vol. 12, pp. 47–64, 2002.
- [70] D. Givoli and B. Neta, "High-Order Non-Reflecting Boundary Conditions for Dispersive Waves," Wave Motion, Vol. 37, pp. 257–271, 2003.
- [71] D. Givoli and B. Neta, "High-Order Non-Reflecting Boundary Scheme for Time-Dependent Waves," J. Computational Physics, Vol. 186, pp. 24–46, 2003.
- [72] P. Barbone, D. Givoli and I. Patlashenko, "Optimal Modal Reduction of Vibrating Substructures," Int. J. Numerical Methods in Engineering, Vol. 57, pp. 341–369, 2003.
- [73] D. Givoli and B. Neta, "High-Order Non-Reflecting Boundary Conditions for the Dispersive Shallow Water Equations," J. Computational and Applied Mathematics, Vol. 158, pp. 49–60, 2003.
- [74] D. Givoli, B. Neta and I. Patlashenko, "Finite Element Analysis of Time-Dependent Semi-Infinite Wave Guides with High-Order Boundary Treatment," Int. J. Numerical Methods in Engineering, Vol. 58, pp. 1955–1983, 2003.
- [75] L. Manevitz and D. Givoli, "Towards Automating the Finite Element Method: A Test-Bed for Soft Computing," Applied Soft Computing, Vol. 3, pp. 37–51, 2003.
- [76] V. van Joolen, D. Givoli and B. Neta, "High-Order Non-Reflecting Boundary Conditions for Dispersive Waves in Cartesian, Cylindrical and Spherical Coordinate Systems," Int. J. Computational Fluid Dynamics (special issue in honor of M. Kawahara), Vol. 17, pp. 263–274, 2003.
- [77] D. Givoli, P. Barbone and I. Patlashenko, "Which are the Important Modes of a Subsystem?" Int. J. Numerical Methods in Engineering, Vol. 59, pp. 1657–1678, 2004.
- [78] D. Givoli, "Finite Element Modeling of Thin Layers," Computer Modeling in Engineering & Sciences, Vol. 5, pp. 497–514, 2004.
- [79] V. van Joolen, B. Neta and D. Givoli, "High-Order Boundary Conditions for Linearized Shallow Water Equations with Stratification, Dispersion and Advection," Int. J. Numerical Methods in Fluids, Vol. 46, pp. 361–381, 2004.
- [80] D. Givoli and I. Patlashenko, "Dirichlet-to-Neumann Boundary Condition for Time-Dependent Dispersive Waves in Three-Dimensional Guides," J. Computational Physics, Vol. 199, pp. 339-354, 2004.
- [81] A. Mar-Or and D. Givoli, "A Finite Element Structural-Acoustic Model of Coupled Membranes," J. Computational Acoustics, Vol. 12, pp. 605–618, 2004.

- [82] V. van Joolen, B. Neta and D. Givoli, "A Stratified Dispersive Wave Model with High-Order Non-Reflecting Boundary Conditions," Computers & Mathematics With Applications (special issue in memory of G. Fix), Vol. 48, pp. 1167–1180, 2004.
- [83] V. Shenfeld, D. Givoli and S. Vigdergauz, "Optimal Shape of a Grain or a Fiber Cross-Section in a Two-Phase Composite," Communications in Numerical Methods in Engineering, Vol. 21, pp. 49–60, 2005.
- [84] L. Manevitz, A. Bitar and D. Givoli, "Neural Network Time Series Forecasting of Finite-Element Mesh Adaptation," Neurocomputing, Vol. 63, pp. 447–463, 2005.
- [85] V. van Joolen, B. Neta and D. Givoli, "High-Order Higdon-Like Boundary Conditions for Exterior Transient Wave Problems," Int. J. Numerical Methods in Engineering, Vol. 63, pp. 1041–1068, 2005.
- [86] D. Givoli, T. Hagstrom and I. Patlashenko, "Finite Element Formulation with High Order Absorbing Boundary Conditions for Time-Dependent Waves," Computer Methods in Applied Mechanics & Engineering, Vol. 195, pp. 3666-3690, 2006.
- [87] A. Wacher and D. Givoli, "Remeshing and Refining with Moving Finite Elements: Application to Nonlinear Wave Problems," Computer Modeling in Engineering & Sciences, Vol. 15, pp. 147–164, 2006.
- [88] A. Mar-Or and D. Givoli, "The Global-Regional Model Interaction Problem Analysis of Carpenter's Scheme and Related Issues," Int. J. Multiscale Computational Engineering, Vol. 4, pp. 617–646, 2006.
- [89] A. Wacher and D. Givoli, "Solution of Nonlinear Dispersive Wave Problems Using a Moving Finite Element Method," Communications in Numerical Methods in Engineering, Vol. 23, pp. 253–262, 2007.
- [90] T. Hagstrom, M. de Castro, D. Givoli and D. Tzemach, "Local High Order Absorbing Boundary Conditions for Time-Dependent Waves in Guides," J. Computational Acoustics, Vol. 15, pp. 1–22, 2007.
- [91] D. Rabinovich, D. Givoli and S. Vigdergauz, "XFEM-Based Crack Detection Scheme Using a Genetic Algorithm," Int. J. Numerical Methods in Engineering, Vol. 71, pp. 1051–1080, 2007.
- [92] T. Hagstrom, A. Mar-Or and D. Givoli, "High-Order Local Absorbing Conditions for the Wave Equation: Extensions and Improvements," J. Computational Physics, Vol. 227, pp. 3322–3357, 2008.
- [93] B. Neta, V. van Joolen, J.R. Dea and D. Givoli, "Application of High-Order Higdon Non-Reflecting Boundary Conditions to Linear Shallow Water Models," Communications in Numerical Methods in Engineering, Vol. 24, pp. 1459–1466, 2008.
- [94] D. Givoli, "On the Number of Reliable Finite Element Eigenmodes," Communications in Numerical Methods in Engineering, Vol. 24, pp. 1967–1977, 2008.
- [95] I. Gur and D. Givoli, "A Fictitious Source Method for a Multi-Frequency Acoustic Source over Ground with Given Impedance," Int. J. Multiscale Computational Engineering, Vol. 6, pp. 533–548, 2008.
- [96] A. Mar-Or and D. Givoli, "High Order Global-Regional Model Interaction: Extension of Carpenter's Scheme," Int. J. Numerical Methods in Engineering, Vol. 77, pp. 50–74, 2009.
- [97] D. Rabinovich, D. Givoli and S. Vigdergauz, "Crack Identification by 'Arrival Time' Using XFEM and a Genetic Algorithm," Int. J. Numerical Methods in Engineering, Vol. 77, pp. 337–359, 2009.
- [98] E. Shavelzon and D. Givoli, "Boundary Transfer Operators in One-Way Nesting Schemes for Heat Flow Problems," Int. J. Numerical Methods for Heat & Fluid Flow, Vol. 19, pp. 352–373, 2009.
- [99] L. Kucherov and D. Givoli, "High Order Absorbing Boundary Conditions Incorporated in a Spectral Element Formulation," Int. J. Numerical Methods in Biomedical Engineering (Formerly Commun. Numer. Meth. Engng.), Vol. 26, pp. 1130–1143, 2010.
- [100] E. Bécache, D. Givoli and T. Hagstrom, "High Order Absorbing Boundary Conditions for Anisotropic and Convective Wave Equations," J. Computational Physics, Vol. 229, pp. 1099–1129, 2010.
- [101] A. Mar-Or and D. Givoli, "High Order One-Way Model-Nesting in Dispersive Non-Uniform Media,"
  J. Computational and Applied Mathematics, Vol. 234, pp. 1663–1669, 2010.
- [102] T. Hagstrom, T. Warburton and D. Givoli, "Radiation Boundary Conditions for Time-Dependent Waves Based on Complete Plane Wave Expansions," J. Computational and Applied Mathematics, Vol. 234, pp. 1988–1995, 2010.

- [103] D. Rabinovich, D. Givoli and E. Bécache, "Comparison of High-Order Absorbing Boundary Conditions and Perfectly Matched Layers in the Frequency Domain," Int. J. Numerical Methods in Biomedical Engineering (Formerly Commun. Numer. Meth. Engng.), Vol. 26, pp. 1351–1369, 2010.
- [104] S. Tayeb and D. Givoli, "Optimal Modal Reduction of Dynamic Subsystems: Extensions and Improvements," Int. J. Numerical Methods in Engineering, Vol. 85, pp. 1–30, 2011.
- [105] D. Baffet and D. Givoli, "On the Stability of the High-Order Higdon Absorbing Boundary Conditions," Applied Numerical Mathematics, Vol. 61, pp. 768–784, 2011.
- [106] D. Rabinovich, D. Givoli, J. Bielak and T. Hagstrom, "A Finite Element Scheme with a High Order Absorbing Boundary Condition for Elastodynamics," Computer Methods in Applied Mechanics and Engineering, Vol. 200, pp. 2048–2066, 2011.
- [107] Y. Ofir, D. Givoli and A. Libai, "An Axisymmetric Parachute Model with Wrinkling," Journal of. Mechanics of Materials and Structures, Vol. 6, 417-442, 2011.
- [108] C. Sussmann, D. Givoli and Y. Benveniste, "Combined Asymptotic Finite-Element Modeling of Thin Layers for Scalar Elliptic Problems," Computer Methods in Applied Mechanics and Engineering, Vol. 200, pp. 3255-3269, 2011.
- [109] T. Hagstrom, E. Bécache, D. Givoli and K. Stein, "Complete Radiation Boundary Conditions for Convective Waves," Communications in Computational Physics, Vol. 11, pp. 610-628, 2012.
- [110] Y. Hollander and D. Givoli, "Teaching Error Estimates for Engineering Approximations: Application to Torsion in Thin-Walled Sections," Int. J. of Engineering Education, Vol. 28, pp. 209–218, 2012.
- [111] D. Givoli and E. Turkel, "Time Reversal with Partial Information for Wave Refocusing and Scatterer Identification," Computer Methods in Applied Mechanics and Engineering, Vol. 213–216, pp. 223–242, 2012.
- [112] Y. Agnon, A. Regev and D. Givoli, "A Simple Procedure for Multi-Frequency Analysis," AIAA J., Vol. 50, pp. 238–242, 2012.
- [113] D. Baffet, J. Bielak, D. Givoli, T. Hagstrom and D. Rabinovich, "A Long-Time Stable High Order Absorbing Boundary Condition for Elastodynamics," Computer Methods in Applied Mechanics and Engineering, Vol. 241–244, pp. 20–37, 2012.
- [114] R. Reitbort, I. Gur and D. Givoli, "Computational Methods for Analyzing Aircraft Noise above Ground with General Topography and Impedance," J. of Computational Acoustics, Vol. 20, pp. 1240001:1-18, 2012.
- [115] D. Rabinovich, D. Givoli, T. Hagstrom and J. Bielak, "Stress-Velocity Complete Radiation Boundary Conditions," J. of Computational Acoustics, Vol. 21, pp. 1350003-1–38, 2013.
- [116] Y. Ofir, D. Rabinovich and D. Givoli, "Comparison of 2D-1D Coupling Methods for Time-Harmonic Elasticity," Int. J. for Multiscale Computational Engineering, Vol. 12, pp. 485–506, 2014.
- [117] T. Hagstrom, D. Givoli, D. Rabinovich and J. Bielak, "The Double Absorbing Boundary Method," J. Computational Physics, Vol. 259, pp. 220-241, 2014.
- [118] E. Amitt, D. Givoli and E. Turkel, "Time Reversal for Crack Identification," Computational Mechanics, Vol. 54, pp. 443-459, 2014.
- [119] D. Rabinovich, Y. Ofir and D. Givoli, "The Nitsche Method Applied to Mixed-Dimensional Coupling," Computer Methods in Applied Mechanics and Engineering, Vol. 274, pp. 125–147, 2014.
- [120] D. Baffet, T. Hagstrom and D. Givoli, "Double Absorbing Boundary Formulations for Acoustics and Elastodynamics," SIAM J. on Scientific Computing, Vol. 36, pp. A1277A1312, 2014.
- [121] I. Levi, E. Turkel and D. Givoli, "Time Reversal for Elastic Wave Refocusing and Scatterer Location Recovery," J. of Computational Acoustics, Vol. 23, pp. 1450013-1–29, 2015.
- [122]Y. Ofir and D. Givoli, "DtN-Based Mixed-Dimensional Coupling Using a Boundary Stress Recovery Technique," Computer Methods in Applied Mechanics and Engineering, Vol. 287, pp. 31–53, 2015.
- [123] D. Rabinovich, D. Givoli, J. Bielak and T. Hagstrom, "The Double Absorbing Boundary Method for Elastodynamics in Homogeneous and Layered Media," Advanced Modeling and Simulation in Engineering Sciences, Vol. 2:3, pp. 1–27, 2015.

- [124] I. Tuval, D. Givoli and E. Behar, "Hybrid Asymptotic Numerical Modeling of Thin Layers for Dynamic Thermal Analysis of Structures," Int. J. of Numerical Methods for Heat and Fluid Flow, Vol. 26, pp. 818–853, 2016.
- [125] Y. Ofir, D. Rabinovich and D. Givoli, "Mixed-Dimensional Coupling via an Extended Dirichlet-to-Neumann Method," Int. J. for Multiscale Computational Engineering, Vol. 14, pp. 489513, 2016.
- [126] E. Amitt, D. Givoli and E. Turkel, "Combined Arrival-Time Imaging and Time Reversal for Scatterer Identification," Computer Methods in Applied Mechanics and Engineering, Vol. 313, pp. 279–302, 2017.
- [127] D. Rabinovich, D. Givoli, J. Bielak and T. Hagstrom, "The Double Absorbing Boundary Method for a Class of Anisotropic Elastic Media," Computer Methods in Applied Mechanics and Engineering, Vol. 315, pp. 190–221, 2017.
- [128] D. Givoli, R. Bharali and L.J. Sluys, "LATIN: A New View and an Extension to Wave Propagation in Nonlinear Media," Int. J. for Numerical Methods in Engineering, Vol. 112, pp. 125–156, 2017.
- [129] C. Lopatin, D. Rabinovich, D. Givoli and E. Turkel, "Computational Time Reversal for NDT Applications using Experimental Data," J. of Nondestructive Evaluation, Vol. 36, pp. 48-1–18, 2017.
- [130] A. Kahana, E. Turkel and D. Givoli, "Convective Wave Equation and Time Reversal Process for Source Refocusing," J. Theoretical & Computational Acoustics, Vol. 26, pp. 1850016-1–30, 2018.
- [131] D. Rabinovich, E. Turkel and D. Givoli, "An Augmented Time Reversal Method for Source and Scatterer Identification," J. Computational Physics, Vol. 375, pp. 99–119, 2018.
- [132] H. Amar and D. Givoli, "Mixed-Dimensional Modeling of Time-Dependent Wave Problems Using the Panasenko Construction," J. Theoretical & Computational Acoustics, Vol. 26, pp. 1850034-1–11, 2018.
- [133] T. Levin, E. Turkel and D. Givoli, "Obstacle identification using the TRAC algorithm with a second-order ABC," Int. J. for Numerical Methods in Engineering, Vol. 118, pp. 61–92, 2019.
- [134] H. Amar and D. Givoli, "Mixed-Dimensional Coupling for Time-Dependent Wave Problems Using the Nitsche Method," Computer Methods in Applied Mechanics and Engineering, Vol. 349, pp. 213–250, 2019.
- [135] D. Rabinovich, S. Vigdergauz, D. Givoli, T. Hagstrom and J. Bielak, "Optimized First-Order Absorbing Boundary Conditions for Anisotropic Elastodynamics," Computer Methods in Applied Mechanics and Engineering, Vol. 350, pp. 719–749, 2019.
- [136] Y. Kamoun and D. Givoli, "A Fictitious Source Method for a Multi-Frequency Acoustic Source Over Ground with Variable Impedance," Int. J. Multiscale Computational Engineering, Vol. 17, pp. 563–582, 2019.
- [137] A. Kahana, E. Turkel, S. Dekel and D. Givoli, "Obstacle Segmentation based on the Wave Equation and Deep Learning," J. Computational Physics, Vol. 413, pp. 109458-1–10, 2020.
- [138] S. Papadimitropoulos, D. Rabinovich and D. Givoli, "The Double Absorbing Boundary Method Incorporated in a High-order Spectral Element Formulation," J. Theoretical & Computational Acoustics, Vol. 28, pp. 2050007-1-10, 2020.
- [139] D. Rabinovich, D. Givoli, J. Bielak and E. Turkel, "Scatterer Identification in a 2D Geophysical Medium using an Augmented Computational Time Reversal Method," Int. J. for Numerical and Analytic Methods in Geomechanics, Vol. 45, pp. 867–892, 2021.
- [140] D. Givoli, "Asymptotic Analysis for Plane Stress Problems Classroom Note," J. of Elasticity, Vol. 144, pp. 1–14, 2021.
- [141] S. Papadimitropoulos and D. Givoli, "The Double Absorbing Boundary method for the Helmholtz equation," Applied Numerical Mathematics, Vol. 168, pp. 182–200, 2021.
- [142] D. Rabinovich and D. Givoli, "Elastodynamic 2D-1D Coupling Using the DtN Method," J. Computational Physics, Vol. 448, pp. 110722-2–22, 2022.
- [143] A. Sayag and D. Givoli, "Shape Identification of Scatterers Using a Time-Dependent Adjoint Method," Computer Methods in Applied Mechanics and Engineering, Vol. 394, pp. 114923-1–32, 2022.

- [144] R. Efrati and D. Givoli, "Hybrid 3D-2D Finite Element Modeling for Elastodynamics," Finite Element in Analysis & Design, Vol. 210, pp. 103812-1–18, 2022.
- [145] D. Rabinovich, E. Amitt, D. Givoli and E. Turkel, "Comparison of the FWI-Adjoint and Time Reversal Methods for the Identification of Elastic Scatterers," J. Theoretical & Computational Acoustics, Vol. 30, pp. 2240004-1–37, 2022.
- [146] A. Kahana, E. Turkel, S. Dekel and D. Givoli, "A Physically-Informed Deep-Learning Model Using Time-Reversal for Locating a Source from Sparse and Highly Noisy Sensors Data," J. Computational Physics, Vol. 470, pp. 111592-1–13, 2022.
- [147] F. Kadmany, O. Rabinovitch and D. Givoli, "Identification of Structural Damage Severity Using an Inverse Wave Analysis," J. Nondestructive Evaluation, Vol. 42, pp. 49-1–11, 2023.
- [148] D. Rabinovich, D. Givoli and E. Turkel, "Single-Field Identification of Inclusions and Cavities in an Elastic Medium," Int. J. Numerical Methods in Engineering, Vol. 125, pp. e7364-1–29, 2024.
- [149] D. Givoli and D. Rabinovich, "Sequential Dirichlet-to-Neumann Coupling for Mixed-Dimensional Problems," J. of Computational Physics, Vol. 499, pp. 112709-1–23, 2024.

# 4. Review Papers

- [150] D. Givoli, "Non-Reflecting Boundary Conditions: A Review," J. of Computational Physics, Vol. 94, No. 1, pp. 1–29, 1991.
- [151] D. Givoli, "Recent Advances in the DtN FE Method," Archives of Computational Methods in Engineering, Vol. 6, No. 2, pp. 71–116, 1999.
- [152] D. Givoli, "Exact Representations on Artificial Interfaces and Applications in Mechanics," Applied Mechanics Reviews, Vol. 52, No. 11, pp. 333–349, 1999.
- [153] D. Givoli, "High-Order Local Non-Reflecting Boundary Conditions: A Review," Wave Motion, Vol. 39, pp. 319–326, 2004.
- [154] D. Givoli, "Time Reversal as a Computational Tool in Acoustics and Elastodynamics," J. Computational Acoustics, Vol. 22, pp. 1430001-1–40, 2014.
- [155] D. Givoli, "A Tutorial on the Adjoint Method for Inverse Problems," Computer Methods in Applied Mechanics and Engineering, Vol. 380, pp. 113810-1–23, 2021.
- [156] D. Givoli, "Dahlquist's Barriers and Much Beyond," Journal of Computational Physics, Vol. 475, pp. 111836-1–19, 2023.

# 5. Research Journal Papers, Submitted

- [157] O. Ovadia, A. Kahana, P. Stinis, E. Turkel, D. Givoli and G.E. Karniadakis, "ViTO: Vision Transformer-Operator," Computer Methods in Applied Mechanics and Engineering, submitted.
- [158] D. Rabinovich and D. Givoli, "A Kirchhoff Migration Scheme for Elastic Obstacle Identification," Inverse Problems, submitted.

### 6. Contribution in an Edited Book

- [1] D. Givoli, "A Combined Boundary Integral Finite Element Method for Large Domain Problems," in *Boundary Elements X, Vol. 1: Mathematical and Computational Aspects*, C.A. Brebbia, ed., pp. 535–548, Springer-Verlag, 1988.
- [2] D. Givoli, "Finite Element Analysis of Heat Problems in Unbounded Domains," in *Numerical Methods In Thermal Problems*, Volume VI, R.W. Lewis and K. Morgan, eds., pp. 1094–1104, Pineridge Press, Swansea, U.K., 1989.
- [3] D. Givoli, L. Manevitz and M. Margi, "An Expert System for the Efficient Numbering of Finite Element Nodes," in *Artificial Intelligence and Structural Engineering*, B.H.V. Topping, ed., pp. 63–72, Civil-Comp

- Press, Edinburgh, 1991.
- [4] D. Givoli and J.B. Keller, "Non-Reflecting Finite Elements," in *The Mathematics of Finite Elements and Applications*, J.R. Whiteman, ed., Chapter 21, pp. 307–314, Wiley, London, 1994.
- [5] D. Givoli and I. Patlashenko, "Optimal Local Artificial Boundary Conditions," in *Computational Methods for Unbounded Domains*, T. Geers, ed., pp. 151–158, Kluwer, Boston, 1998.
- [6] L. Manevitz and D. Givoli, "The Finite Element Method and Soft Computing," in *Advances in Soft Computing Engineering Design and Manufacturing*, R. Roy, T. Furuhashi and P.K. Chawdhry, eds., Springer-Verlag, London, 1999.
- [7] D. Givoli and I. Patlashenko, "Static Optimal Control of the Large Deformation of a Hyperelastic Plate," in *Advances in the Mechanics of Plates and Shells (The Libai Volume)*, D. Durban et al., eds., pp. 151–166, Kluwer, Dordrecht, 2001.
- [8] D. Givoli and I. Patlashenko, "Optimal Local Absorbing Boundary Conditions for Problems in Infinite Domains," in *Absorbing Boundaries and Layers, Domain Decomposition Methods*, L. Tourrette and L. Halpern, eds., pp. 219–241, Nova Science, Huntington, New York, 2001.
- [9] L. Manevitz, A. Bitar and D. Givoli, "Finite-Element Mesh Adaptation via Time Series Prediction Using Neural Networks," in *Soft Computing and Industry*, R. Rajkumar et al., eds., pp. 769–782, Springer-Verlag, Berlin, 2002.
- [10] D. Givoli, P.E. Barbone and I. Patlashenko, "Recent Advances in Modal Reduction of Vibrating Substructures," in *Innovation in Computational Structures Technology*, B.H.V. Topping et al., eds., pp. 417–438, Saxe-Coburg Publications, Glasgow, UK, 2006.
- [11] D. Givoli, "Computational Absorbing Boundaries," in *Computational Acoustics of Noise Propagation in Fluids*, S. Marburg and B. Nolte, eds., Chapter 5, pp. 145–166, Springer, Berlin, 2008.
- [12] D. Rabinovich, D. Givoli and S. Vigdergauz, "Flaw Identification in Structures via Computationally Assisted NDT," in *Advances in Mathematical Modeling and Experimental Methods for Materials and Structures (The Jacob Aboudi Volume)*, R. Gilat and L. Banks-Sills, eds., pp. 223–236, Springer, Berlin, 2010.

# 7. Refereed Papers in Conference Proceedings

- [1] D. Givoli, "An Absorbing Boundary Condition for Elastic Waves," 30th Israel Conf. on Aviation and Astronautics, Haifa, Israel, 1989.
- [2] D. Givoli and L. Rivkin, "A Finite Element Formulation for Axisymmetric Elastic Shells with Large Rotations," 23rd Israel Conf. on Mechanical Engineering, Haifa, Israel, 1990 .
- [3] D. Givoli, "A Combined Analytic Finite Element Procedure for Acoustic and Elastic Waves," 2nd World Congress on Computational Mechanics, Stuttgart, Germany, 1990.
- [4] O. Rand and D. Givoli, "A Thermoelastic Analysis of Space Structures Undergoing Periodic Motion," 17th ICAS Congress, Stockholm, Sweden, 1990.
- [5] I. Elishakoff, Y. Janashvilli and D. Givoli, "Treatment of Uncertain Eccentricities via Convex Optimization," 6th Int. Conf. on Applications of Statistics and Probabilities in Civil Engineering, Mexico City, Mexico, 1991.
- [6] D. Givoli and I. Elishakoff, "Stress Concentration at a Nearly Circular Hole With Uncertain Irregularities," 1991 ASME Winter Annual Meeting, Atlanta, Georgia, 1991.
- [7] D. Givoli, "Exact Non-Reflecting Boundary Conditions for Time-Harmonic and Time-Dependent Problems," 1st Int. Conf. on Mathematical and Numerical Aspects of Wave Propagation Phenomena, Strasbourg, France, 1991, book published by SIAM, ed. G. Cohen et al., pp. 737–739.
- [8] D. Givoli and O. Rand, "An Efficient Solution Procedure for the Thermoelastic Analysis of Truss Space Structures," 32nd Israel Conf. on Aviation and Astronautics, Haifa, Israel, 1992.
- [9] D. Givoli and O. Rand, "A Numerical Procedure for the Three-Dimensional Thermal Analysis of Space Structures," 18th ICAS Congress, Beijing, China, 1992.

- [10] D. Givoli, "Numerical Procedures for the Solution of Exterior Acoustics Problems," 25th Israel Conf. on Mechanical Engineering, Haifa, Israel, 1994.
- [11] I. Doukhovni and D. Givoli, "Finite Element Solution of Geometrically Nonlinear Contact Problems of Beams," 25th Israel Conf. on Mechanical Engineering, Haifa, Israel, 1994.
- [12] D. Givoli and J.B. Keller, "A Hierarchy of Non-reflecting Finite Elements," 3rd World Congress on Computational Mechanics, Chiba, Japan, 1994.
- [13] D. Givoli and O. Rand, "Minimization of the Thermoelastic Deformation in Space Structures Undergoing Periodic Motion," 3rd World Congress on Computational Mechanics, Chiba, Japan, 1994.
- [14] S. Vigdergauz and D. Givoli, "A Finite Element Method for Wave Problems with Geometrical Singularities," 3rd Int. Conf. on Mathematical and Numerical Aspects of Wave Propagation Phenomena, Mandelieu, France, 1995 book published by SIAM, ed. G. Cohen et al., pp. 299–307.
- [15] L. Manevitz, M. Yousef and D. Givoli, "Automatic Mesh Generation Using Self-Organizing Neural Networks," Symp. on Foundations of Artif. Intell. (BISFAI-95), Israel, 1995.
- [16] L. Manevitz, D. Givoli, M. Margi and M. Yousef, "AI and NN Tools for the Finite Element Method," 1st On-line World Conf. on Soft Computing in Engineering Design and Manufacturing (WSC1), 1996.
- [17] I. Patlashenko and D. Givoli, "Local Non-Reflecting Finite Element Schemes for Acoustic Wave Guides," 2nd ECCOMAS Conf. on Numerical Methods in Engineering, Paris, 1996, book published by Wiley, ed. J.-A. Desideri et al., pp. 337–343.
- [18] O. Rand and D. Givoli, "Minimization of the Periodic Thermoelastic Deformation in Space Structures by Active Loads," 1997 ASME Winter Annual Meeting, Dallas, Texas, 1997.
- [19] D. Givoli and F. Yaacobson, "An Adaptive Finite Element Procedure for Segmentation Problems," 4th World Congress on Computational Mechanics, Buenos Aires, 1998.
- [20] D. Givoli, I. Patlashenko and J.B. Keller, "DtN Schemes for Nonlinear Problems in Unbounded Domains," 4th World Congress on Computational Mechanics, Buenos Aires, 1998.
- [21] L. Rivkin and D. Givoli, "Moving Finite Elements for Viscoelasticity With Application to Propellants," 40th Israel Annual Conf. on Aerospace Sciences (IACAS), Haifa, 2000.
- [22] D. Givoli and R. Zusman, "An Adaptive Finite Element Framework for Fatigue Crack Propagation," 22nd ICAS Congress, Harrogate, UK, 2000.
- [23] D. Givoli and I. Patlashenko, "An Arbitrarily High Order Local Non-Reflecting Boundary Scheme," ECCOMAS-2000 Conf. on Numerical Methods in Engineering, Barcelona, 2000.
- [24] L. Manevitz, D. Givoli and A. Bitar, "Neural Network Time Series Forecasting of Finite Element Mesh Adaptation," Symp. on Foundations of Artif. Intell. (BISFAI-01), Israel, 2001.
- [25] L. Manevitz, A. Bitar and D. Givoli, "Finite Element Mesh Adaptation for PDEs Using NN Time Series Prediction," 6th On-line World Conf. on Soft Computing in Engineering Design and Manufacturing (WSC6), 2001.
- [26] R. Zusman and D. Givoli, "Finite Element Simulation of Fatigue Crack Growth," 43rd Israel Annual Conf. on Aerospace Sciences (IACAS), Haifa, 2003.
- [27] D. Givoli, "Exact and High-Order Non-Reflecting Computational Boundaries," 6th Int. Conf. on Mathematical and Numerical Aspects of Wave Propagation, Jyväskylä, Finland, 2003, book published by Springer, ed. G. Cohen et al., pp. 26–31.
- [28] V. van Joolen, B. Neta and D. Givoli, "High-Order Non-Reflecting Boundary Conditions for Dispersive Wave Problems in Stratified Media," 6th Int. Conf. Coastal Engineering, Cadiz, Spain, 2003.
- [29] A. Libai and D. Givoli, "Wrinkles in Pulled Axisymmetric Membranes," Int. Conf. on Structural Membranes, Barcelona, Spain, 2003, book published by CIMNE, ed. E. Oñate and B. Kröplin, pp. 433–438.
- [30] A. Mar-Or and D. Givoli, "A Finite Element Structural-Acoustic Model of Coupled Membranes," ECCOMAS-04 Conf. on Numerical Methods in Engineering, Jyväskylä, Finland, 2004.

- [31] D. Rabinovich, D. Givoli and S. Vigdergauz, "Crack Detection Without Remeshing Using a Genetic Algorithm," 47th Israel Annual Conf. on Aerospace Sciences (IACAS), Haifa, 2007.
- [32] D. Rabinovich, D. Givoli and S. Vigdergauz, "A Fixed-Mesh Crack Detection Scheme Using a Genetic Algorithm," Proc. ECCOMAS Conference on Computational Dynamics, Rethymno, Crete, 2007.
- [33] D. Rabinovich, D. Givoli and S. Vigdergauz, "Crack Detection in Structures Without Remeshing," 48th Israel Annual Conf. on Aerospace Sciences (IACAS), Haifa, 2008.
- [34] I. Gur and D. Givoli, "A Fictitious Source Method for the Solution of Acoustics Problems," 48th Israel Annual Conf. on Aerospace Sciences (IACAS), Haifa, 2008.
- [35] D. Rabinovich, D. Givoli and S. Vigdergauz, "Framework for Flaw Detection," ASME Int. Conf. on Eng. Systems Design and Analysis, Haifa, 2008.
- [36] D. Rabinovich, D. Givoli and S. Vigdergauz, "Detection of an Inclusion in a Membrane Using a Genetic Algorithm," 8th Int. Conf. on Computational Structures Technology, Athens, 2008. Also in book, B.H.V. Topping et al., eds., Civil-Comp Press, 2008, ISBN 978-1-905088-23-2.
- [37] C. Sussmann and D. Givoli, "Special Finite Element Formulations based on Asymptotic Thin Layer Models," 10th Int. Conf. on Computational Structures Technology, Valencia, Spain, 2010. Also in book, B.H.V. Topping et al., eds., Civil-Comp Press, 2010, ISBN 978-1-905088-38-6.
- [38] C. Sussman, D. Givoli and Y. Benveniste, "Special Finite Element Formulations Based on Asymptotic Thin Layer Models," 51st Israel Annual Conf. on Aerospace Sciences (IACAS), Tel Aviv, 2011.
- [39] I. Gur and D. Givoli, "Enriched Finite Element Methods for the Solution of Large Scale Aero-Acoustic Problems," 51st Israel Annual Conf. on Aerospace Sciences (IACAS), Tel Aviv, 2011.
- [40] D. Rabinovich, D. Givoli, T. Hagstrom and J. Bielak, "High Order Absorbing Boundary Conditions for Elastodynamics," ECCOMAS Conf. on Computational Methods in Structural Dynamics (COMPDYN-2011), Corfu, Greece, 2011.
- [41] C. Sussman, D. Givoli and Y. Benveniste, "Finite Element Formulation for Asymptotic Thin Layer Modeling," 52nd Israel Annual Conf. on Aerospace Sciences (IACAS), Tel Aviv, 2012.
- [42] E. Amitt, D. Givoli and E. Turkel, "Time Reversal as a Computational Tool for Crack Identification," 33rd Int. Conf. on Aeronautical Fatigue (ICAF-2013), Jerusalem, 2013.
- [43] Y. Ofir, D. Rabinovich and D. Givoli, "Computational Coupling of Models for Aerospace Structures," 54th Israel Annual Conf. on Aerospace Sciences (IACAS), Tel Aviv and Haifa, 2014.
- [44] Y. Ofir, D. Rabinovich and D. Givoli, "Computational Coupling of 1D and 2D Models for Elastic Structures," 12th Int. Conf. on Computational Structures Technology, Naples, Italy, 2014. Also in book, B.H.V. Topping et al., eds., Civil-Comp Press, 2014, ISBN 978-1-905088-61-4.
- [45] Y. Kamoun and D. Givoli, "Fictitious Sources Method for Noise Level Analysis above a Flat Ground with Variable Impedance," 55th Israel Annual Conf. on Aerospace Sciences (IACAS), Tel Aviv and Haifa, 2015.
- [46] Y. Ofir and D. Givoli, "Mixed-Dimensional Coupling in Aerospace Structures," 57th Israel Annual Conf. on Aerospace Sciences (IACAS), Tel Aviv and Haifa, 2017.
- [47] A. Kahana, O. Ovadia, E. Turkel and D. Givoli. "Obstacle Location and Identification using Time Reversal and Deep Learning," 11th Int. Conf. on CFD, Maui, Hawaii, 2022.

# 8. Other Publications

### On a routine basis:

- Author of a periodical *Book Review* column in IACM Expressions (magazine of the Int. Association for Computational Mechanics), 2009–present.
- Author of a periodical column in IACM Expressions (see above) on The Israel Association for Computational Methods in Mechanics, 2003–2015.

# Special items:

- [1] D. Givoli, Infinite Elements (by P. Bettess): Book Review, Computer Methods in Applied Mechanics and Engineering, Vol. 105, pp. 435–436, 1993.
- [2] D. Givoli, "Reflections on Good Teaching" (in Hebrew), Cathedrion, No. 1, pp. 7–9, 1994.
- [3] D. Givoli, "Impressions from U.S. Federal Agency Presentations," IACM Expressions, No. 2, Int. Assoc. Computational Mechanics, 1996.
- [4] D. Givoli, "A Family of Matrix Problems," Problems and Solutions, SIAM Review, Vol. 39, p. 514, 1997.
- [5] D. Givoli, "A Singular IACM/IUTAM Minisymposium," IACM Expressions, No. 4, Int. Assoc. Computational Mechanics, 1997.
- [6] D. Givoli, Variational Methods in Nonlinear Elasticity (by P. Pedregal): Book Review, Applied Mechanics Reviews, Vol. 54, p. B39, 2001.
- [7] D. Givoli, "The Top 10 Computational Methods of the 20th Century," IACM Expressions, No. 11, Int. Assoc. Computational Mechanics, 2001 (reappeared in the 25-anniversary issue, No. 19).
- [8] D. Givoli, Variational Methods for Structural Optimization (by A. Cherkaev): Book Review, Applied Mechanics Reviews, Vol. 55, p. B44–B45, 2002.
- [9] D. Givoli, "Top 10 Computational Methods of the 20th Century," Asian Infrastructure Research Review, Vol. 4, No. 1, 2002.
- [10] D. Givoli, Natural Boundary Integral Method and Its Applications (by D.-H. Yu): Book Review, Applied Mechanics Reviews, Vol. 56, p. B65, 2003.
- [11] D. Givoli, "CM Glossary A Riddle," IACM Expressions, Nos. 14 & 15, Int. Assoc. Computational Mechanics, 2003 & 2004.
- [12] D. Givoli, "The Cassini-Huygens Story," BIAF, No. 96 (in Hebrew), 2005.
- [13] D. Givoli, "The Art of Generating Reference Solutions for Computational Schemes," IACM Expressions, No. 21, Int. Assoc. Computational Mechanics, 2007.
- [14] D. Givoli, "Incorporating Analytical Information in Computational Schemes," IACM Expressions, No. 23, Int. Assoc. Computational Mechanics, 2008.
- [15] D. Givoli, "Methods and Communities," IACM Expressions, No. 24, Int. Assoc. Computational Mechanics, 2009.
- [16] D. Givoli, "The CM Questions of the Month," IACM Expressions, No. 31, Int. Assoc. Computational Mechanics, 2012.
- [17] D. Givoli, "More CM Questions of the Month," IACM Expressions, No. 33, Int. Assoc. Computational Mechanics, 2013.
- [18] D. Givoli, Artificial Boundary Method (by H. Han and X. Wu): Book Review, SIAM Rev., Vol. 56, pp. 714–716, 2014.

### 9. Patent

• US Patent No. 10/657,210, "Apparatus and Method for Efficient Adaptation of Finite Element Meshes for Numerical Solutions," with L. Manevitz and A. Bitar, approved July 2007.

# 10. Reports

- 22 TAE, TAU, IMI, RPI, NPS and BU reports.
- "The 1992 Boeing 747 Amsterdam accident: analysis" (with A.J. McEvily, P. Pinsky and A. Bercovitz), report for El Al Israel Airlines by the accident investigation team, 1993.