



Professor Hans Irschik

See:

<https://www.jku.at/en/institute-of-technical-mechanics-tmech/about-us/team/prof-hans-irschik/>
https://www.ae-info.org/ae/Member/Irschik_Hans
https://scholar.google.at/citations?user=8f_YGTwAAAAJ&hl=de

Head, Institute of Technical Mechanics, Johannes Kepler University, Linz, Austria

Summary:

Hans Irschik is the author or co-author of about 370 scientific publications in a wide field of theoretical and applied mechanics with special emphasis placed on the interdisciplinary coupling to mathematics, physics and control. His interests concern plates and shells, plasticity and viscoplasticity, linear and non-linear vibrations and waves, earthquake engineering, thermal stresses, computational and probabilistic methods of structural mechanics, smart and intelligent structures, structural control and health monitoring, as well as mechatronics. He is also active in the fields of variable-mass and multi-body dynamic systems, in biomechanics and in configurational mechanics. Since 2006, he serves as Managing Editor and Editor-in-Chief of Acta Mechanica. Hans Irschik is a Full Member of the Austrian Academy of Sciences and a Honorary Doctor of the St. Petersburg Polytechnic State University.

Selected Publications:

Editor of Books:

See the images above.

Journal Articles, etc.:

Hans Irschik, "Ein Integralgleichungsverfahren zur Berechnung allseits frei drehbar gelagerter Trapezplatten mit rechten Winkeln.", in ZAMM, Vol. 60, Seite(n) T125-T127, 1980
Hans Irschik, "Zur Berechnung thermisch belasteter, dünner, elastischer Platten.", in ZAMM, Vol. 61, Seite(n) T97-T99, 1981
Hans Irschik, Franz Ziegler, "Application of the Green's Function Method to Thin Elastic Polygonal Plates.", in Acta Mechanica, Vol. 39, Seite(n) 155-169, 1981
Hans Irschik, "Eine Analogie zwischen Lösungen für schubstarre und schubelastische Platten.", in ZAMM, Vol. 62, Seite(n) T129-T131, 1982
Hans Irschik, "Erweiterung eines Randintegralgleichungsverfahrens auf Platten mit elastisch gelagerten Rändern.", in ZAMM, Vol. 63, Seite(n) T174-T177, 1983
Hans Irschik, "Ein Randintegralgleichungsverfahren für temperaturmoment-beanspruchte Platten.", in Ingenieur-Archiv, Vol. 53, Seite(n) 197-207, 1983
Hans Irschik, "A boundary-integral equation method for bending of orthotropic plates.", in International Journal

of Solids and Structures, Vol. 20, Seite(n) 245-255, 1984

Hans Irschik, "Membrane-Type Eigenmotions of Mindlin Plates.", in Acta Mechanica, Vol. 55, Seite(n) 1-20, 1985

Hans Irschik, Franz Ziegler, "Thermal shock loading of elastoplastic beams.", in Journal of Thermal Stresses, Vol. 8, Seite(n) 53-69, 1985

Hans Irschik, Franz Ziegler, "Nonstationary random vibrations of yielding frames.", in Nuclear Engineering and Design, Vol. 90, Seite(n) 357-364, 1985

Franz Ziegler, Hans Irschik, "Dynamic Analysis of Elastic-Plastic Beams by Means of Thermoelastic Solutions.", in International Journal Solids Structures, Vol. 21, Seite(n) 819- 829, 1985

Hans Irschik, "Das Mohrsche Verfahren zur Berechnung von Biegebalken mit nichtlinearem Werkstoffgesetz.", in Technische Mechanik, Vol. 6, Seite(n) 21-28, 1985

Hans Irschik, "Berechnung plastizierender Biegebalken unter dynamischer Querbelastung in Analogie zum linearen Wärmeschockproblem.", in ZAMM, Vol. 65, Seite(n) T60-T62, 1985

Josef Kovarik, Hans Irschik, "Iron Removal by Desferrioxamine in Patients on Chronic Hemodialysis - Kinetic Study and Long-Term Results.", in Contributions to Nephrology, Vol. 49, Seite(n) 45-55, 1985

Josef Kovarik, Helmut Graf, Hans Irschik, "Individuelle Dialyse durch computergesteuerte Vorschreibung.", in Wiener Klinische Wochenschrift, Vol. 97, Seite(n) 809-812, 1985

Hans Irschik, "Biaxial Dynamic Bending of Elastoplastic Beams.", in Acta Mechanica, Vol. 62, Seite(n) 155-167, 1986

Hans Irschik, "Berechnung inelastischer Platten mittels Einflußfunktionen.", in Ingenieur-Archiv, Vol. 56, Seite(n) 332-342, 1986

Hans Irschik, "Nonstationary Random Vibrations of Yielding Multi-Degree-of-Freedom Systems: Method of Effective Envelope Functions.", in Acta Mechanica, Vol. 60, Seite(n) 265- 280, 1986

Hans Irschik, "Large Thermoelastic Deflections and Stability of Simply Supported Polygonal Panels.", in Acta Mechanica, Vol. 59, Seite(n) 31-46, 1986

H. Graf, Hans Irschik, "A New Algorithm for Individual Dialysis Prescription.", in Medical Progress Through Technology, Vol. 11, Seite(n) 191-196, 1986

Peter Fotiu, Hans Irschik, "Statisch unbestimmte Sandwichbalken mit nichtlinearen Stoff- gesetzen.", in ZAMM, Vol. 66, Seite(n) T135-T137, 1986

Rudolf Heuer, Hans Irschik, "Ein Randintegralgleichungsverfahren für harmonische Schwing- ungen von trapezförmigen Membranen und Platten.", in ZAMM, Vol. 66, Seite(n) T40-41, 1986

Hans Irschik, "Zum Einfluß großer Amplituden auf freie Plattenschwingungen.", in ZAMM, Vol. 67, Seite(n) T85-T86, 1987

Hans Irschik , Rupert Hasenzagl, Franz Ziegler, "Elastoplastische Zufallsschwingungen bei Erdbebenerregung vom Typ Friaul.", in Österreichische Ingenieur- und Architektenzeitschrift, Vol. 132, Seite(n) 353-359, 1987

Peter Fotiu, Hans Irschik, Franz Ziegler, "Forced Vibrations of an Elasto-Plastic and Deteriorating Beam.", in Acta Mechanica, Vol. 69, Seite(n) 193-203, 1987

Rudolf Heuer, Hans Irschik, "A Boundary Element Method for Eigenvalue Problems of Polygonal Membranes and Plates.", in Acta Mechanica, Vol. 66, Seite(n) 9-20, 1987

Hans Irschik, Franz Ziegler, "Dynamics of Linear Elastic Structures with Selfstress: A Unified Treatment for Linear and Nonlinear Problems.", in ZAMM, Vol. 68, Seite(n) 199-205, 1988

Peter Fotiu, Hans Irschik, Franz Ziegler, "Analysis of Viscoplastic Sandwich Beams Using Influence Functions.", in Mechanics of Structures and Machines, Vol. 16, Seite(n) 35-52, 1988

Rupert Hasenzagl, Hans Irschik, Franz Ziegler, "Design Charts for Random Vibrations of Elasto-plastic Oscillators Subjected to Kanai-Tajimi Spectra.", in Reliability Engineering and System Safety, Vol. 23, Seite(n) 109-126, 1988

Hans Irschik, "Ein zweckmäßiges Rechenverfahren für stofflich nichtlineare, statisch unbe- stimmte Balken.", in ZAMM, Vol. 69, Seite(n) T460-T462, 1989

Hans Irschik, Rudolf Heuer, Franz Ziegler, "Dynamic analysis of polygonal Mindlin plates on two-parameter foundations using classical plate theory and an advanced BEM.", in Computational Mechanics, Vol. 4, Seite(n) 293-300, 1989

Peter Fotiu, Hans Irschik, "Modal analysis of vibrating viscoplastic composite beams on multiple supports.", in Earthquake Engineering and Structural Dynamics, Vol. 18, Seite(n) 1053- 1064, 1989

Rupert Hasenzagl, Hans Irschik, "Elasto-plastische Zufallsschwingungen: Neue Ergebnisse der Methode der

effektiven Bebenerrregung.", in ZAMM, Vol. 69, Seite(n) T430-T432, 1989

Hans Irschik, "Influence of large amplitudes on free flexural vibrations of polygonal, shear- deformable plates – a unifying dimensionless formulation", in International Journal of Solids and Structures, Vol. 26, Seite(n) 675-681, 1990

H. Hayek, Hans Irschik, Franz Ziegler, "Random excitation of a yielding cantilever: approximate analysis versus simulations.", in Structural Safety, Vol. 8, Seite(n) 263-279, 1990

Rudolf Heuer, Hans Irschik, Franz Ziegler, "Multi-Modal Approach for Large Natural Flexural Vibrations of Thermally Stressed Plates.", in Nonlinear Dynamics, Vol. 1, Seite(n) 449- 458, 1990

Rudolf Heuer, Hans Irschik, "Eine Analogie zwischen Membran und Sandwichplatte mit „dicken“ Deckschichten.", in ZAMM, Vol. 70, Seite(n) T41-T43, 1990

Hans Irschik, "Analogy between refined beam theories and the Bernoulli-Euler theory.", in International Journal of Solids and Structures, Vol. 28, Seite(n) 1105-1112, 1991

Hans Irschik, "Analogies between Bending of Plates and the Torsion Problem.", in Journal of Engineering Mechanics, Vol. 117, Seite(n) 2503-2508, 1991

Hans Irschik, Franz Ziegler, "Nonstationary Random Vibrations: Approximate Spectral Formulation Versus Exact Theory.", in Probabilistic Engineering Mechanics, Vol. 6, Seite(n) 83-91, 1991

Rudolf Heuer, Hans Irschik, "Erzwungene Schwingungen elastischer Sandwichplatten mit dicken Deckschichten.", in ZAMM, Vol. 71, Seite(n) T86-T88, 1991

Rudolf Heuer, Hans Irschik, Franz Ziegler, "Thermally Forced Vibrations of Moderately Thick Polygonal Plates." in Journal of Thermal Stresses, Seite(n) 203-210, 1992

Rudolf Heuer, Hans Irschik, Peter Fotiu, Franz Ziegler, "Nonlinear flexural vibrations of layered plates.", in International Journal of Solids and Structures, Vol. 29, Seite(n) 1813-1818, 1992

Renate M. Klauser, Hans Irschik, Josef Kovarik, "Single Dose Response Kinetics of Cyclosporine A: Critical Re-Examination.", in Transplantations Proceedings, Vol. 24, Seite(n) 2610-2614, 1992

Hans Irschik, "On Vibrations of Layered Beams and Plates (Hauptvortrag GAMM-Tagung Leipzig 1992).", in ZAMM, Vol. 73, Seite(n) T34-T45, 1993

Hans Irschik, Peter Fotiu, Franz Ziegler, "Extension of Maysel's formula to the dynamic eigenstrain problem." , in Journal of the Mechanical Behavior of Materials, Vol. 5, Seite(n) 59- 66, 1993

Rudolf Heuer, Hans Irschik, Franz Ziegler, "Nonlinear random vibrations of thermally buckled skew plates." , in Probabilistic Engineering Mechanics, Vol. 8, Seite(n) 265-271, 1993

Hans Irschik, "Stability of skew Mindlin plates under isotropic in-plane pressure (Disc. of ASCE Paper No. 3706)." , in Journal of Engineering Mechanics, Vol. 10, Seite(n) 2243-2245, 1994

Hans Irschik, Franz Ziegler, "Spherical Elastic-Viscoplastic Waves.", in ZAMM, Vol. 74, Seite(n) T176-T179, 1994

Walter Brunner, Hans Irschik, "Dynamic interaction of inelastic structures and fluids.", in Engineering Transactions, Vol. 42, Seite(n) 181-194, 1994

Walter Brunner, Hans Irschik, "An Efficient Algorithm for Elasto-Viscoplastic Vibrations of Multi-Layered Composite Beams Using Second-Order Theory.", in Non Linear Dynamics, Vol. 6, Seite(n) 37-48, 1994

Peter Fotiu, Hans Irschik, Franz Ziegler, "Modal analysis of elastic-plastic vibrations by integral equations.", in Engineering Analysis with Boundary Elements, Vol. 14, Seite(n) 81-97, 1994

Hans Irschik, Alexander Belyaev, Kurt Schlacher, "Anwendung der Mohrschen Analogie auf "intelligente" Konstruktionen.", in ZAMM, Seite(n) 81-82, 1995

Hans Irschik, Franz Pachinger, "On thermal bending of moderately thick polygonal plates with simply supported edges.", in Journal of Thermal Stresses, Vol. 18, Seite(n) 59-68, 1995

Hans Irschik, Franz Ziegler, "Dynamic processes in structural thermo-viscoplasticity.", in Applied Mechanics Reviews, Vol. 48, Seite(n) 301-316, 1995

Alexander Belyaev, Hans Irschik, "Zur kinetischen Instabilität von elektrodynamischen Schwingungserregern.", in ZAMM, Vol. 75, Seite(n) T79-T80, 1995

Rudolf Heuer, Hans Irschik, Franz Ziegler, "Nonlinear deterministic and random response of shallow shells.", in Sadhana (Indian Academy of Sciences), Vol. 20, Seite(n) 427-439, 1995

Renate Klauser, Hans Irschik, J. Kletzmayer, I. Sturm, Walter Brunner, W. Woloszezuk, Josef Kovarik, "Neoral - A New Microemulsion Formula of Cyclosporine A: Interpatient Pharmacokinetic Variability in Renal Transplant Recipients.", in Transplantation Proceedings, Vol. 27, Seite(n) 3427-3429, 1995

Franz Ziegler, Hans Irschik, Helmut Holl, "Spherical Elastic-Plastic Waves.", in Journal of Vibration and

Control, Vol. 1, Seite(n) 345-360, 1995

Hans Irschik, Kurt Schlacher, "Eine Faltungsintegraldarstellung für piezoelektrisch induzierte Schwingungen: Biegeschwingungen geschichteter Platten.", in e&i, Elektrotechnik und Informationstechnik, Vol. 113, Seite(n) 520-525, 1996

Hans Irschik, Franz Ziegler, "Maysel's Formula Generalized for Piezoelectric Vibrations: Application to Thin Shells of Revolution.", in AIAA-Journal, Vol. 34, Seite(n) 2402-2405, 1996

Alexander Belyaev, Hans Irschik, "Non-linear waves in complex structures modelled by elastic- viscoplastic stochastic media.", in International Journal of Non-Linear Mechanics, Vol. 31, Seite(n) 771-777, 1996

Alexander Belyaev, Hans Irschik, "Kinetische Instabilität elektrodynamischer Schwingungs- erreger.", in e&i, Elektrotechnik und Informationstechnik (e&i), Vol. 113, Seite(n) 489- 494, 1996

Werner Haas, Hans Irschik, Kurt Schlacher, "Aktive Dämpfung elastischer Strukturen mittels Piezoaktoren.", in e&i, Elektrotechnik und Informationstechnik, Seite(n) 702-708, 1996

Helmut Holl, Hans Irschik, "Ein Mehrzweck-Versuchsaufbau zum Studium von Schwingern mit zwei Freiheitsgraden, parametererregter Schwingungen und der Schwingungstilgung.", in Österreichische Ingenieur- und Architektenzeitschrift, Vol. 141, Seite(n) 153-156, 1996

Alexander Belyaev, Hans Irschik, "On the dynamic instability of components in complex structures.", in International Journal of Solids and Structures, Vol. 34, Seite(n) 2199-2217, 1997

Klaus Hagenauer, Hans Irschik, "Eine Analogie für vorgekrümmte schubelastische Platten mit eingepprägter Temperaturkrümmung.", in ZAMM, Vol. 77, Seite(n) S111-S112, 1997

Renate Klauser, Walter Brunner, Hans Irschik, J. Kletzmayer, Josef Kovarik, I. Sturm, W. Woloszezuk, "Pharmacokinetic Cyclosporine A Profiles Under Long-Term Neoral Treatment in Renal Transplant Recipients: Does Fat Intake Still Matter?", in Transplantation Proceedings, Vol. 29, Seite(n) 3137-3140, 1997

Kurt Schlacher, Hans Irschik, Andreas Kugi, "Aktiver Erdbebenschutz für mehrstöckige Gebäude.", in e&i, Elektrotechnik und Informationstechnik, Vol. 114, Seite(n) 85-91, 1997

Christian Weiss, Hans Irschik, "Berücksichtigung des Normalkrafteinflusses auf piezoelektrisch induzierte Balkenschwingungen.", in e&i, Elektrotechnik und Informationstechnik, Vol. 114, Seite(n) 98-102, 1997

Kurt Schlacher, Andreas Kugi, Hans Irschik, "Nonlinear control of earthquake excited high raised buildings by approximate disturbance decoupling.", in Acta Mechanica, Vol. 125, Seite(n) 49-62, 1997

Hans Irschik, Michael Krommer, Alexander Belyaev, Kurt Schlacher, "Shaping of Piezoelectric Sensors/Actuators for Vibrations of Slender Beams: Coupled Theory and Inappropriate Shape Functions.", in Journal of Intelligent Materials Systems and Structures, Vol. 9, Seite(n) 546- 554, 1998

Hans Irschik, Kurt Schlacher, Andreas Kugi, "Control of earthquake excited nonlinear structures using Liapunov's theory.", in Computers and Structures, Vol.67, Seite(n) 83-90, 1998 (F.Schwappe Best Paper Award, Int. Conference on Uncertain Structures, Miami 1996)

Kurt Schlacher, Andreas Kugi, Hans Irschik, "H-infinity-control of random structural vibrations with piezoelectric actuators.", in Computers and Structures, Vol. 67, Seite(n) 137-145, 1998

Martin Baldinger, Hans Irschik, "On the Parametric Stability of Mindlin-Reissner Plates Subjected to Harmonic In-plane Forces of the Hydrostatic Type.", in ZAMM, Vol. 78, Seite(n) S251-S254, 1998

Walter Brunner, Hans Irschik, Franz Ziegler, "Interaktionsprobleme im plastischen Bereich von Behälterschwingungen.", in ZAMM, Vol. 78, Seite(n) S161-S164, 1998

Franz Pachinger, Hans Irschik, "Fast convergent series solutions for thermal bending of thin rectangular plates.", in Journal of Thermal Stresses, Vol. 21, Seite(n) 763-775, 1998

Helmut Holl, Alexander Belyaev, Hans Irschik, "Simulation of the Duffing-oscillator with time- varying mass by a BEM in time.", in Computers & Structures, Vol. 73, Seite(n) 177-186, 1999

Helmut Holl, Alexander Belyaev, Hans Irschik, "A numerical algorithm for nonlinear dynamic problems based on BEM.", in Engineering Analysis with Boundary Elements, Vol. 23, Seite(n) 503-513, 1999

Michael Krommer, Hans Irschik, "On the influence of the electric field on free transverse vibrations of smart beams.", in Smart Materials and Structures, Vol. 8, Seite(n) 401-410, 1999

Michael Krommer, Hans Irschik, "Influence of coupling terms on the bending of piezothermoelastic beams.", in ZAMM, Vol. 79, Seite(n) S421-S422, 1999

Andreas Kugi, Kurt Schlacher, Hans Irschik, "Infinite-Dimensional Control of Nonlinear Beam Vibrations by Piezoelectric Actuator and Sensor Layers.", in Nonlinear Dynamics, Vol. 19, Seite(n) 71-91, 1999

Hans Irschik, "Zum Fingerschen Virial verformbarer Körper in der nichtlinearen Statik.", in Sitzungsberichte der österreichischen Akademie der Wissenschaften, Mathematisch- Naturwissenschaftliche Klasse, Abteilung II,

Vol. 209, Seite(n) 47-66, 2000

Hans Irschik, Rudolf Heuer, Franz Ziegler, "Statics and dynamics of simply supported polygonal Reissner-Mindlin plates by analogy.", in Archives of Applied Mechanics, Vol. 70, Seite(n) 231-244, 2000

Hans Irschik, Michael Krommer, Uwe Pichler, "Shaping Distributed Piezoelectric Self-Sensing Layers for Static Shape Control of Smart Structures.", in Journal of Structural Control, Vol. 7, Seite(n) 173-189, 2000

Hans Irschik, Michael Krommer, Uwe Pichler, "Shaped Distributed Piezoelectric Sensors: Theory and Experimental Verification.", in ZAMM, Vol. 80, Seite(n) S581-S582, 2000

Michael Krommer, Hans Irschik, "A Reissner-Mindlin-type plate theory including the direct piezoelectric and the pyroelectric effect.", in Acta Mechanica, Vol. 141, Seite(n) 51-69, 2000

Martin Baldinger, Alexander Belyaev, Hans Irschik, "Principal and second instability regions of shear-deformable polygonal plates.", in Computational Mechanics, Vol. 26, Seite(n) 288 - 294, 2000

Hans Irschik, Franz Ziegler, "Eigenstrain without Stress and Static Shape Control of Structures", in AIAA-Journal, Vol. 39, Seite(n) 1985-1999, 2001

Hans Irschik, Uwe Pichler, "Dynamic shape control of solids and structures by thermal expansion strains.", in Journal of Thermal Stresses, Vol. 24, Seite(n) 565-576, 2001

Hans Irschik, Uwe Pichler, Johannes Gerstmayr, Helmut Holl, "Maysel's formula of thermoelasticity extended to anisotropic materials at finite strain.", in International Journal of Solids and Structures, Vol. 38, Seite(n) 9479-9492, 2001

Martin Baldinger, Hans Irschik, Alexander Belyaev, "Parametric instability of polygonal Mindlin-Reissner-plates subjected to harmonic in-plane forces.", in Journal of Sound and Vibration, Vol. 242, Seite(n) 397-409, 2001

Johannes Gerstmayr, Hans Irschik, "The Elasto-Plastic Pendulum with Geometric Stiffening.", in ZAMM, Vol. 81, Seite(n) 337-338, 2001

Johannes Gerstmayr, Helmut Holl, Hans Irschik, "Development of plasticity and damage in vibrating structural elements performing guided rigid-body motions.", in Archive of Applied Mechanics, Vol. 71, Seite(n) 135-145, 2001

Markus Gruber, Michael Krommer, Hans Irschik, "Strenge Lösung für einen piezothermo-elastischen Streifen aus drei Schichten.", in Elektrotechnik und Informationstechnik (e&i), Seite(n) 17-21, 2001

Hans Irschik, "A review on static and dynamic shape control of structures by piezoelectric actuation.", in Engineering Structures, Vol. 24, Seite(n) 5-11, 2002

Hans Irschik, Helmut Holl, "The equations of Lagrange written for a non-material volume.", in Acta Mechanica, Vol. 153, Seite(n) 231-248, 2002

Michael Krommer, Hans Irschik, "An electromechanically coupled theory for piezoelastic beams taking into account the charge equation of electrostatics.", in Acta Mechanica, Vol. 154, Seite(n) 141-158, 2002

Hans Irschik, Michael Krommer, Uwe Pichler, "Dynamic shape control of beam – type structures by piezoelectric actuation and sensing.", in International Journal of Applied Electromagnetics and Mechanics, Vol. 17, Seite(n) 251-258, 2003

. Hans Irschik, Uwe Pichler, "Static shape control of force-induced infinitesimal deformations superimposed on large deformations of thermoelastic bodies.", in Journal of Thermal Stresses, Vol. 26, Seite(n) 1193-1204, 2003

. Hans Irschik, "On the necessity of surface growth terms for the consistency of jump relations at a singular surface.", in Acta Mechanica, Vol. 162, Seite(n) 195-211, 2003

. Eugenia Cojocaru, Hans Irschik, Kurt Schlacher, "Concentrations of Pressure Between an Elastically Supported Beam and a Moving Timoshenko-Beam.", in ASCE Journal of Engineering Mechanics, Vol. 129, Seite(n) 1076-1082, 2003

. Johannes Gerstmayr, Hans Irschik, "Vibrations of the elasto-plastic pendulum.", in International Journal of Nonlinear Mechanics, Vol. 38, Seite(n) 111-122, 2003

. Markus Dibold, Johannes Gerstmayr, Hans Irschik, "Biaxial Vibrations of an Elasto-Plastic Beam with a Prescribed Rigid-Body Rotation Including the Effect of Stiffening.", in Nonlinear Dynamics, Vol. 34, Seite(n) 147-157, 2003

. Yury Vetyukov, Johannes Gerstmayr, Hans Irschik, "Plastic multipliers as driving variables of numerical simulation in elastoplasticity.", in Mechanics Research Communications, Vol. 30, Seite(n) 421-430, 2003

. Manfred Nader, Hubert Gatringer, Michael Krommer, Hans Irschik, "Shape Control of Flexural Vibrations of Circular Plates by Shaped Piezoelectric Actuation.", in ASME Journal of Vibration and Acoustics, Vol. 125, Seite(n) 88-94, 2003

- Hubert Gattringer, Manfred Nader, Michael Krommer, Hans Irschik, "Collocative PD Control of Circular Plates with Shaped Piezoelectric Actuators / Sensors.", in *Journal of Vibration and Control*, Vol. 9, Seite(n) 965-982, 2003
- Eugenia Cojocaru, Joy Foo, Hans Irschik, "Quasi-static Response of a Timoshenko Beam Loaded by an Elastically Supported Moving Rigid Beam.", in *Technische Mechanik*, Vol. 24, Seite(n) 79-90, 2004
- Eugenia Cojocaru, Hans Irschik, Hubert Gattringer, "Dynamic response of an elastic bridge due to a moving elastic beam.", in *Computers & Structures*, Vol. 82, Seite(n) 931-943, 2004
- Yuri Vetyukov, Johannes Gerstmayr, Hans Irschik, "The comparative analysis of the fully nonlinear, the linear elastic and the consistently linearized equations of motion of the 2D elastic pendulum.", in *Computers & Structures*, Vol. 82, Seite(n) 863-870, 2004
- Johannes Gerstmayr, Markus Dibold, Hans Irschik, "Dynamik geregelter flexibler Mehrkörpersysteme unter Berücksichtigung hydraulischer Aktorik.", in *e&i, Elektrotechnik und Informationstechnik*, Vol. 129, Seite(n) 307-312, 2004
- Thomas Mrazek, Alexander Belyaev, Rudolf Reitbauer, Hans Irschik, "Versuchsgestützte Modellierung von Kfz-Stoßdämpfern für die dynamische Mehrkörpersimulation (MKS).", in *e&i, Elektrotechnik und Informationstechnik*, Vol. 129, Seite(n) 313-318, 2004
- Helmut Holl, Christian Zehetner, Franz Hammelmüller, Hans Irschik, "Rechnergestützte nichtlineare Modellierung von Abkantautomaten.", in *e&i, Elektrotechnik und Informationstechnik*, Vol. 129, Seite(n) 319-324, 2004
- Hans Irschik, Uwe Pichler, "An extension of Neumann's method for shape control of force-induced elastic vibrations by eigenstrains.", in *International Journal of Solids and Structures*, Vol. 41, Seite(n) 871-884, 2004
- Michael Krommer, Hans Irschik, "Boley's method for two-dimensional thermoelastic problems applied to piezoelectric structures.", in *International Journal of Solids and Structures*, Vol. 41, Seite(n) 2121-2131, 2004
- Hans Irschik, Helmut Holl, "Mechanics of variable-mass systems-Part 1: Balance of mass and linear momentum.", in *Applied Mechanics Reviews*, Vol. 57, Seite(n) 145-160, 2004
- Toshio Furukawa, Hans Irschik, "Body-Force Analogy for One-Dimensional Coupled Dynamic Problems of Thermoelasticity", in *Journal of Thermal Stresses*, Vol. 28, Seite(n) 455-464, 2005
- Hans Irschik, Uwe Pichler, "On eigenstrains without displacements.", in *Acta Mechanica*, Vol. 178, Seite(n) 111-122, 2005
- Christian Zehetner, Hans Irschik: "Displacement compensation of beam vibrations caused by rigid-body motions." In: *Smart Materials and Structures*, Vol.14, Seite(n) 862-868, 2005
- Hans Irschik, "Über Wachstumsterme in den Bilanzgleichungen der Kontinuumsmechanik, speziell beim Wachstum von biologischen Materialien.", in *Sitzungsberichte der österreichischen Akademie der Wissenschaften, Mathematisch-Naturwissenschaftliche Klasse, Abteilung II*, Vol. 213 (2004), Seite(n) 95 – 111, Wien, 2005.
- Yury Vetyukov, Johannes Gerstmayr, Hans Irschik, "Modeling spatial motion of 3D deformable multibody systems with nonlinearities.", in *Journal of Multibody System Dynamics*, Vol. 15, Seite(n) 67 – 84, 2006.
- Michael Krommer, Hans Irschik, "Sensor and actuator design for displacement control of continuous systems", in *Smart Structures and Systems*, Vol. 3, No. 2, Seite(n) 147-172, 2007
- Hans Irschik, "On rational treatments of the general laws of balance and jump, with emphasis on configurational formulations", in *Acta Mechanica*, Vol. 194, Seite(n) 11-32, 2007
- Hans Irschik, Markus Gusenbauer, "Body Force Analogy for Transient Thermal Stresses", in *Journal of Thermal Stresses*, Vol. 30, Seite(n) 965-975, 2007
- Christian Zehetner, Hans Irschik, "On the Static and Dynamic Stability of Beams with an Axial Piezoelectric Actuation", in *Smart Structures and Systems*, Vol. 4, No. 1, Seite(n) 67-84, 2008
- Michael Krommer, Hans Irschik, Markus Zellhofer "Design of Actuator Networks for Dynamic Displacement Tracking of Beams", in *Mechanics of Advanced Materials and Structures*, Vol. 15, Seite(n) 235-249, 2008
- Michael Stangl, Johannes Gerstmayr, Hans Irschik, "An alternative approach for the analysis of non-linear vibrations of pipes conveying fluid", in *Journal of Sound and Vibration*, Vol. 310, No. 2, Seite(n) 493-511, 2008
- Johannes Gerstmayr, Hans Irschik, "On the correct representation of bending and axial deformation in the absolute nodal coordinate formulation with an elastic line approach", in *Journal of Sound and Vibration*, Vol. 318, Seite(n) 461-487, 2008

- . Daniel Huber, Michael Krommer, Hans Irschik, "Dynamic Displacement Tracking for Frame Structures with a Piezoelectric Patch Network based on Plate Theory", in *Advances in Science and Technology*, Vol. 56, Seite(n) 64-69, 2008
- . Hans Irschik, Michael Krommer, Manfred Nader, Christian Zehetner, "Mechatronics – The Innovation Request", in *Advances in Science and Technology*, Vol. 56, Seite(n) 1-10, 2008
- . Hans Irschik, Johannes Gerstmayr, "A continuum mechanics based derivation of Reissner's large-displacement finite-strain beam theory: the case of plane deformations of originally straight Bernoulli-Euler beams", in *Acta Mechanica*, Vol. 206(1-2), Seite(n) 1-21, 2009
- . Wolfgang Witteveen, Hans Irschik, "Efficient Mode-Based Computational Approach for Jointed Structures: Joint Interface Modes", in *AIAA Journal*, Vol. 47, No. 1, Seite(n) 252-263, 2009
- . Markus Dibold, Johannes Gerstmayr, Hans Irschik, "A Detailed Comparison of the Absolute Nodal Coordinate and the Floating Frame of Reference Formulation in Deformable Multibody Systems", in: *ASME-Journal of Computational and Nonlinear Dynamics*, Vol. 4, Seite(n) 0210061-02100610, 2009
- . Michael Stangl, Johannes Gerstmayr, Hans Irschik, "A Large Deformation Planar Finite Element for Pipes conveying Fluid based on the Absolute Nodal Coordinate Formulation", in: *ASME- Journal of Computational and Nonlinear Dynamics*, Vol. 4, Seite(n) 0310091-0310098, 2009
- . Alexander Humer, Hans Irschik, "Onset of transient vibrations of axially moving beams with large displacements, finite deformations and an initially unknown length of the reference configuration" , in: *ZAMM - Journal of Applied Mathematics and Mechanics*, Vol. 89, Seite(n) 267 - 278, 2009
- . Hans Irschik, Manfred Nader, „Actuator placement in static bending of smart beams utilizing Mohr's analogy“, in: *Engineering Structures*, Vol. 31, Seite(n) 1698-1706, 2009
- . Daniel Huber, Michael Krommer, Hans Irschik. "Dynamic displacement tracking of a one-storey frame structure using patch actuator networks: Analytical plate solution and FE validation", in *Smart Structures and Systems*, Vol. 5, Seite(n) 613-632, 2009
- . Jürgen Schöftner, Hans Irschik: „Passive damping and exact annihilation of vibrations of beams using shaped piezoelectric layers and tuned inductive networks“, in *Smart Materials and Structures*, Vol. 18, Seite(n) 125008, 2009
- . Karim Sherif, Wolfgang Witteveen, Klaus Puchner, Hans Irschik, "Efficient Topology Optimization of Large Dynamic Finite Element Systems Using Fatigue.", in *AIAA Journal*, Vol. 48, Seite(n) 1339–1347, 2010
- . Eugenia C. Cojocaru, Hans Irschik, "Dynamic response of an elastic bridge loaded by a moving elastic beam with a finite length.", in *Interaction and Multiscale Mechanics*, Vol. 3, Seite(n) 343-363, 2010
- . Hans Irschik, Michael Krommer, Yury Vetyukov, "On the Use of Piezoelectric Sensors in Structural Mechanics: Some novel strategies.", in *Sensors*, 10 (6), Seite(n) 5626-5641, 2010
- . Hans Irschik: Some examples on the significance of the notions combined loadings and non- homogeneity in the mechanics of solids and structures, in *Technical Transactions of Politechniki Krakowskiej*, Vol. 107 (20), Seite(n) 53-59, 2011
- . Jürgen Schöftner, Hans Irschik: „A comparative study of smart passive piezoelectric structures interacting with electric networks: Timoshenko beam theory versus finite element plane stress calculations“, in *Smart Materials and Structures*, Vol. 20, Seite(n) 025007-1-025007-13, 2011
- . Jürgen Schöftner, Hans Irschik: „Passive shape control of force-induced harmonic lateral vibrations for laminated piezoelectric Bernoulli-Euler beams-theory and practical relevance“, in *Smart Structures and Systems*, Vol. 7 (5), Seite(n) 417-432, 2011
- . Hans Irschik, Johannes Gerstmayr: „A continuum-mechanics interpretation of Reissner's non- linear shear-deformable beam theory“, in *Mathematical and Computer Modelling of Dynamical Systems*, Vol. 17 (1), Seite(n) 19-29, 2011
- . Karin Nachbagauer, Astrid Sabine Pechstein, Hans Irschik, Johannes Gerstmayr: „A new locking-free formulation for planar, shear deformable, linear and quadratic beam finite elements based on the absolute nodal coordinate formulation “, in *Journal of Multibody System Dynamics*, Vol. 26 (3), Seite(n) 245-263, 2011
- . Alexander Humer, Hans Irschik, "Large deformation and stability of an extensible elastica with an unknown length", in *International Journal of Solids and Structures*, 48 (11), Seite(n) 1301- 1310, 2011
- . Hans Irschik, Michael Krommer, Christian Zehetner, "A generalized body force analogy for the dynamic theory of thermoelasticity", in *Journal of Thermal Stresses*, Vol. 35 (1-3), Seite(n) 235- 247, 2012
- . Hans Irschik, "The Cayley vibrational principle for continuous-impact problems: A continuum mechanics based

- version in the presence of a singular surface”, in *Journal of Theoretical and Applied Mechanics*, Vol. 50 (3), Seite(n) 717-727, 2012
- Hans Irschik, “Mechatronik – Ausbildung und technischer Fortschritt. Mechatronics – Education and Progress in Engineering”, in *Österreichische Ingenieur- und Architekten-Zeitschrift*, Vol. 157 (1-6), Seite(n) 69-75, 2012
 - Karim Sherif, Hans Irschik, Wolfgang Witteveen, “Transformation of Arbitrary Elastic Mode Shapes Into Pseudo-Free-Surface and Rigid Body Modes for Multibody Dynamic Systems”, in *ASME Journal of Computational and Nonlinear Dynamics*, Vol. 7 (2), 10 pages, 2012
 - Hans Irschik, Michael Krommer, Kurt Schlacher, “Mechanics and Model Based Control”, in: *Advances in Science and Technology*, Vol. 83, Seite(n) 85-94, 2013
 - Michael Krommer, Hans Irschik, “Design of Piezoelectric Sensors for Structural and Health Monitoring based on the Principle of Virtual Work”, in: *Advanced Materials Research*, Vol. 745, Seite(n) 73-87, 2013
 - Jürgen Schöftner, Gerda Buchberger, Hans Irschik, “Static and dynamic shape control of slender beams by piezoelectric actuation and resistive electrodes“, in: *Composite Structures*, Vol. 111, Seite(n) 66-74, 2014
 - Biswajit Basu, Oreste S. Bursi, Fabio Casciati, Sara Casciati, Andrea E. Del Grosso, Marco Domaneschi, Lucia Faravelli, Jan Holnicki-Szulc, Hans Irschik, Michael Krommer, Marco Lepidi, Alessandro Martelli, Baki Ozturk, Francesc Pozo, Gisela Pujol, Zoran Rakicevic, Hose Rodellar, „An European Association for the Control of Structures joint perspective. Recent studies in civil structural control across Europe“, in *Structural Control & Health Monitoring*, 21 (12), Seite(n) 1414-1436, 2014
 - Hans Irschik, „Enhancement of elementary beam theories in order to obtain exact solutions for elastic rectangular beams“, in *Mechanics Research Communications*, Vol. 68, Seite(n) 46-51, 2015
 - Hans Irschik, Michael Krommer, Manfred Nader; Yury Vetyukov, Hans-Georg von Garsen, ”The equations of Lagrange for a continuous deformable body with rigid body degrees of freedom, written in a momentum based formulation”, in: *Journal of Sound and Vibration*, Vol. 335, Seite(n) 269-285, 2015
 - Hans Irschik, Helmut J. Holl, ”Lagrange’s equations for open systems, derived via the method of fictitious particles, and written in the Lagrange description of continuum mechanics”, in: *Acta Mechanica*, Vol. 226 (1), Seite(n) 63-79, 2015
 - Jürgen Schöftner, Gerda Buchberger, Andreas Brandl, Hans Irschik, “Theoretical prediction and experimental verification of shape control of beams with piezoelectric patches and resistive circuits“, in: *Composite Structures*, Vol. 133, Seite(n) 746-755, 2015
 - Peter Hutterer, Regina Gattringer, Hans Irschik, Franz Strehl, ”Managing Contradictory Stakeholder Demands of a Publicly Funded Research Center“, in: *International Journal of Innovation and Technology Management*, Vol. 12 (1), 20 pages, 2015
 - Michael Krommer, Hans Irschik, ”Post-Buckling of Piezoelectric Thin Plates”, in: *International Journal of Structural Stability and Dynamics*, Vol. 15 (7), 21 pages, 2015
 - Leonardo Casetta, Hans Irschik, Celso Pupo Pesce, “A generalization of Noether’s theorem for a non-material volume”, in: *ZAMM*, Vol. 96 (6), Seite(n) 696-706, 2016
 - Hans Irschik, Michael Krommer, Christian Zehetner, “Displacement tracking of pre-deformed smart structures”, in: *Smart Structures and Systems*, Vol. 18 (1), Seite(n) 139-154, 2016
 - Jürgen Schöftner, Hans Irschik, ”Stress tracking in thin bars by eigenstrain actuation”, in: *Journal of Sound and Vibration*, Vol. 383, Seite(n) 35-45, 2016
 - Alexander K. Belyaev, Vladimir V. Eliseev, Hans Irschik, Evgenii A. Oborin, ”Contact of two equal rigid pulleys with a belt modelled as Cosserat nonlinear elastic rod”, in: *Acta Mechanica*, Vol. 228 (12), Seite(n) 4425-4434, 2017
 - Hans Irschik, Rudolf Heuer, ”Analogies for simply supported nonlocal Kirchhoff plates of polygonal planform”, in: *Acta Mechanica*, Vol. 229 (2), Seite(n) 867-879, 2018
 - Alexander K. Belyaev, Aleksandr V. Fedotov, Hans Irschik, Manfred Nader; Vladimir A. Polyanskiy, Nina A. Smirnova, ”Experimental study of local and modal approaches to active vibration control of elastic systems”, in: *Structural Control and Health Monitoring*, Vol. 25 (2), 15 pages, 2018
 - Alexander K. Belyaev, Vladimir V. Eliseev, Hans Irschik, Evgenii A. Oborin, ” Static contact of belt and pulleys with account for shear and gravity”, in: *Journal of Physics: Conf. Series* 1048 (2018) 012002, 9 pages, 2018
 - Jürgen Schöftner, Andreas Brandl, Hans Irschik, ”Control of stress and damage in structures by piezoelectric actuation: 1D theory and monofrequent experimental validation”, in: *Structural Control Health Monitoring*, Vol. 26 (5), 14 pages, 2019

- Hans Irschik, "Generalized reciprocity theorems for infinitesimal deformations superimposed upon finite deformations of rods: the plane problem", in: Acta Mechanica, Vol. 230 (11), Seite(n) 3909-3921, 2019