



Em.O.Univ.Prof. Dipl.-Ing. Dr.techn. Dr.h.c. Wilhelm Schneider

Curriculum Vitae

Born in Vienna, Austria, on May 3, 1938. Citizenship: Austria.

Married (to Sonja, since 1965), two sons (Wolfgang *1966, Peter *1970).

Academic career

- 1961 Dipl.-Ing. (mechanical engineering), T.H.Wien, Vienna, Austria
- 1961 - 1963 Research Assistant, Institute of Fluid Mechanics, T.H. Wien, Vienna, Austria
- 1963 Dr. techn. , T.H.Wien, Vienna, Austria
- 1964 - 1968 Research Associate, Institute of Theoretical Gas Dynamics, DVL, Aachen, Germany
- 1968/1969 Senior Postdoctoral Research Associate, Jet Propulsion Laboratory, Pasadena, U.S.A.
- 1969 - 1973 Head, Hypersonics and Radiation Gas Dynamics Section, Institute of Theoretical Gas Dynamics, DFVLR, Aachen, Germany
- 1970 Habilitation (venia legendi), RWTH Aachen, Germany
- 1973 - 2006 Professor of Gas Dynamics and Thermodynamics, Dept. Mechanical Engineering, Technical University (T.U.), Vienna , Austria
- 1973 - 1979 Head, Institute of Gas Dynamics and Thermodynamics, T.U. Vienna
- 1976 - 1982 Chairman, 1st Diploma Examination Committee, T.U. Vienna
- 1980 - 1982, 1986 - 1990, 1999 - 2002 Head, Institute of Fluid Mechanics and Heat Transfer, T.U. Vienna
- 1985 Visiting Professor, Cornell University, Ithaca, U.S.A.
- 1994 - 2001 Head, Christian Doppler Laboratory of Continuous Casting Processes, Vienna.
- 1993 - 2008 Rector, International Centre for Mechanical Sciences (CISM), Udine, Italy
- 2006 - Professor emeritus, T.U. Vienna

Awards, honours, named lectures

- 1966 Ernst Mach Prize, awarded by Deutsche Gesellschaft für Flugwissenschaften (German Society of Aeronautical Sciences)
- 1989 Corresponding Member, Austrian Academy of Sciences
- 1990 Ludwig Prandtl Memorial Lecture, Hannover, Germany
- 1991 Fellowship, Japan Society for the Promotion of Science
- 1995 Member, Austrian Academy of Sciences (2002-2006 Chairman, 2006- Vice Chairman, Engineering Section)
- 1999 Chemical Engineering Button, T. U. Vienna
- 1999 Faxén Lecture, Stockholm, Sweden
- 2003 Dr.h.c., Università degli Studi di Udine, Italy
- 2005 Ludwig Prandtl Ring, awarded by Deutsche Gesellschaft für Luft- und Raumfahrt (German Society of Aeronautics and Astronautics)
- 2008 Corresponding Member, Accademia Udinese di Scienze Letteri e Arti
- 2008 Honorary Rector, International Centre for Mechanical Sciences (CISM), Udine, Italy
- 2011 Member, European Academy of Sciences and Arts

Dedications

- A. KLUWICK (Ed.): Recent Advances in Boundary Layer Theory. *Dedicated to Prof. W. Schneider on the occasion of his 60th birthday*. CISM Courses and Lectures No. 390, SpringerWienNewYork 1998.
- N. AKSEL, A. SOLDATI and H. STEINRÜCK (Eds.): Acta Mechanica, Vol. 201 (2008), Nos. 1-4. 23 papers. *Dedicated to Prof. W. Schneider on the occasion of his 70th birthday*.
- H. JANESCHITZ-KRIEGL: Crystallization Modalities in Polymer Melt Processing. *Dedicated to Prof. Wilhelm Schneider, Technical University Vienna, on the occasion of his 70th birthday, and also for his essential contributions to the correct description of the course of crystallization under processing conditions*. SpringerWienNewYork 2010.

Scientific councils and committees

- Euromech Correspondent (1975-1995).
- Vorstandsrat (Advisory Board), Gesellschaft für angewandte Mathematik und Mechanik (GAMM) (1980-1988).
- International Congress Committee, International Union of Theoretical and Applied Mechanics (IUTAM) (1982-1990).
- Austrian National Committee for Theoretical and Applied Mechanics (Member 1984-2006; Deputy Chairman, 1984-1993; Honorary Member 2006-).
- International Centre for Mechanical Sciences (CISM), Udine, Italy: Scientific Council (1985-); Rector (1993–2008), Honorary Rector (2009-); Academic Assembly (member 1993–2008, Honorary Member 2009-); Board of Directors (Member 1993–2008, Honorary Member 2009-).
- Scientific Council, Max-Planck-Institut f. Strömungsforschung, Göttingen (1983-1993).
- Fachausschuss „Wärme- und Stoffübertragung“ (Sci. Comm. „Heat & Mass Transfer“, VDI, Germany (Member 1986–2002, Permanent Honorary Guest 2003-2009).
- European Fluid Mechanics Conference Committee (1992-1997).
- Evaluation Committee, Zentrum für Raumfahrttechnologie und Mikrogravitation (ZARM), Bremen, Germany (Chairman, 1994).
- Kuratorium (Board of Curators), Institut für Technikfolgen-Abschätzung, Austrian Academy of Sciences (Deputy Chairman, 1996-1999, Chairman 1999-2007).
- IFAC (International Federation of Automatic Control)-Beirat Österreich (1998-2008).
- Evaluation Committee, Dept. of Mech. and Process Eng., ETH Zürich (President, 1998).
- Evaluation Committee, Dept. of Mech. Eng., EPF Lausanne (President, 1998).
- Kuratorium (Board of Curators), Institut für Schallforschung, Austrian Academy of Sciences (1999-2007).
- International Scientific Advisory Board, FaxénLaboratoriet, KTH Stockholm (2002-2004).
- Kuratorium (Board of Curators), Forschungsstelle für Integrierte Sensorsysteme, Austrian Academy of Sciences (2003-2004).
- Erwin-Schrödinger Prize Committee, Austrian Academy of Sciences (2008- 2012).

Scientific journals

- Acta Mechanica (Advisory Board, 1976-);
- Acta Mechanica Sinica (English Series) (Advisory Board, 2001-2003);
- Archive of Applied Mechanics (Ingenieur-Archiv) (Editorial Board, 1981-2008);
- Fluid Dynamics Research (Regional Editor [Europe], 1986-2002);
- Thermal Science and Engineering (Editorial Board, 1999-);
- ZAMM - Zeitschrift für angewandte Mathematik und Mechanik (Applied Mathematics and Mechanics) (Editorial Board, 1991-);
- Zeitschrift für Flugwissenschaften und Weltraumforschung (Journal of Flight Sciences and Space Research - ZFW) (Editorial Advisory Board, 1977-1996).

Teaching experiences

Regularly given courses (T.U. Vienna, 1974- 2006)

- Thermodynamics (elementary);
- Multiphase flow (intermediate);
- Heat transfer (intermediate);
- Thermodynamics of living systems (advanced);
- Turbulent flows (advanced);
- Case studies in fluid mechanics and heat transfer - industrial applications (advanced).

Other courses (advanced)

- Transonic flow (RWTH Aachen);
- Waves in fluids (RWTH Aachen);
- Vortex motion (RWTH Aachen);
- Radiative heat transfer (RWTH Aachen & T.U. Vienna);
- Advanced heat transfer (Cornell University, Ithaca, N.Y.);
- Mathematical methods in fluid mechanics (RWTH Aachen & T.U. Vienna);
- Thermodynamics of irreversible processes (T.U. Vienna);
- Dissipative structures and evolution (T.U. Vienna).

Invited teaching

- Strahlungsgasdynamik (radiation gas dynamics). 9th Course on Space Technology. Göttingen, March 1971.
- Thermodynamics and dynamics of a gas containing radiating solid particles. International Centre for Mechanical Sciences (CISM), Udine, Italy, October 1972 (6 lectures as part of the Advanced Course on "Radiation Gas Dynamics).
- Waves due to the slow compression of a gas in a cylinder. Indian Institute of Science, Bangalore, India, September 1979 (2 lectures).
- The theory of kinematic waves with applications to sedimentation and condensation. Indian Institute of Science, Bangalore, India, September 1979 (3 lectures).
- Mathematical methods in fluid mechanics. Von Karman Institute for Fluid Mechanics. Rhode Saint Genese, Belgium, February 1980 (Course Director; 3 lectures).

Invited lectures at scientific conferences

- Referat über die Arbeiten auf dem Gebiet der Hyperschallaerodynamik im DVL-Institut für Theoretische Gasdynamik. 11. Sitzung des WGLR-Ausschusses "Aerodynamik", München, 9.12.1966.
- Hyperschallströmungen - Entwicklungsrichtungen der Theorie. Symposium über Gasdynamik anlässlich des 60. Geburtstags von Prof. K. Oswatitsch. Wien, 14.3.1970.
- Energietransport durch Strahlung. Seminar über Transportvorgänge in Gasen und Flüssigkeiten, Porz-Wahn, 20. April 1972.
- Radiation gasdynamics of planetary entry - concepts and recent advances. Invited paper presented at the 23rd International Astronautical Congress, Vienna, October 10, 1972.
- Strahlungseffekte in Ein- und Mehrphasenströmungen. Hauptvortrag, GAMM-Tagung, Göttingen, 4.4.1975.
- Über den Einfluß der Schwerkraft auf anisotherme, turbulente Freistrahlen. Strömungsmechanisches Kolloquium anlässlich des 70. Geburtstages von Prof. A. Naumann, Aachen, 16.7.1975.
- Radiation effects in single-phase and multiphase flow. XVth International Congress of Theoretical and Applied Mechanics (ICTAM), Toronto, Canada, August 20, 1980. (Invited sectional lecture).
- Asymptotic analysis of jet flows. Invited Lecture, XVI Biennial Fluid Dynamics Symposium, Spala (Poland), September 9, 1983.
- Strömungs- und Erstarrungsvorgänge beim Metallgießen. Symposium der Ehemaligen des Aerodynamischen Institutes der RWTH Aachen, Aachen, 6.10.1984.
- Analysis of jet flows. International Mini-Symposium on Aerospace and Ocean Engineering, Blacksburg, VA, USA, November 12, 1984.
- Strömungs- und Erstarrungsvorgänge in Metallen und Kunststoffen. "Mechanik und Industrie", Igls (Tirol), 27.2.1985.
- with *U. Schaflinger*: Kinematic waves in suspensions. Invited paper, 22nd Annual Meeting of the Society of Engr. Sci., Pennsylvania State University, October 7, 1985.
- Flows induced by jets. IUTAM Symposium "Fluid Mechanics in the Spirit of G. I. Taylor", Cambridge, U. K., March 27, 1986.
- Die Bedeutung analytischer Methoden für die Strömungsmechanik im Zeitalter des Computers. Festkolloquium anlässlich des 60. Geburtstages von Prof. J. Zierep, Karlsruhe, 25.01.1989.
- Asymptotische Analyse freier Turbulenz. Strömungsmechanisches Festkolloquium anlässlich des 60. Geburtstages von Prof. Dr.-Ing. K. Gersten, Bochum, 2.11.1989.
- Natürliche Konvektionsströmungen. Sitzung d. Math.-nat. Klasse, Österr. Akademie d. Wiss., Wien, 10. 11. 1989.
- Grenzschichttheorie freier Turbulenz. Ludwig-Prandtl-Gedächtnisvorlesung, GAMM-Tagung, Hannover, 9.4.1990.
- Free shear flows. IUTAM General Assembly, Vienna, September 1, 1990.
- with *J. Berger* and *A. Köppl*: Non-isothermal crystallization of polymers: Application of rate equations. 1st Intl. Conf. Transport Phenomena in Processing, Honolulu, Hawaii, March 25, 1992.

- Laminar mixed convection flows on horizontal surfaces. 3rd Caribbean Congr. Fluid Dyn., Caracas, Venezuela, February 7, 1995.
- Introduction to the modelling of industrial fluid flows. Minisymp. 182, 3rd Intl. Congr. Industrial & Applied Math., Hamburg, July 6, 1995.
- Crystallization waves in glassy materials. Minisymp. ‘‘Continuum Thermodynamics and Phase Transitions’’, Symp. on Trends in Applications of Math. to Mech. (STAMM X), Warsaw, Sept. 6, 1996.
- Travelling crystallization waves in glassy polymers. Symp. on Structure Development During Solidification in the Processing of Crystalline Polymers (DECRYPO 96), Linz, October 3, 1996.
- Flüssigkeits- und Gasstrahlen - Erscheinungsformen, technische Anwendungen, Forschungsaufgaben. Gesamtsitzung d. Österr. Akad. d. Wiss., Wien, 15. 11. 1996.
- (in cooperation with *M. Digruber*) Fluid flows with hydraulic jumps. Festkolloquium/Symposium ‘‘Recent Advances in Mechanics of Solids and Fluids’’ on the occasion of the 60th birthday of Professor Franz Ziegler, Vienna, November 28, 1997.
- Kann die Grenzschichttheorie die Strömung über eine horizontale, gekühlte Platte beschreiben? Kolloquium anlässlich der Verabschiedung von Prof. Ingolf Teipel, Hannover, 20. 3. 1998.
- Fluid dynamic modelling of industrial problems. 3rd Intl. Conf. Fluid Mech., Beijing, July 7, 1998.
- Modeling of industrial fluid flows. Faxén Lecture, Annual Meeting of the Faxén Laboratories, Stockholm, August 27, 1999.
- Recent developments in modelling continuous casting of steel. EUROMECH Coll. 408: Interactive Dynamics of Convection and Solidification, Chamonix, March 21, 2000.
- Continuous solidification processes. Plenary Lecture, Annual Scientific Meeting GAMM 2000, Göttingen, April 7, 2000.
- Peculiarities of boundary-layer flows over horizontal plates. International Conference on Recent Advances in Mathematical Sciences (ICRAMS 2000), Kharagpur, India, December 22, 2000.
- A few problems of turbulence modelling from an asymptotic point of view. 2nd Colloquium, Interdisciplinary Turbulence Initiative, Darmstadt, 19 September 2002.
- Gasdynamik bewegter Lichtbögen. Festkolloquium anlässlich des 75. Geburtstages von Prof. J. Zierep, Karlsruhe, 23. Januar 2004.
- Grenzschichten mit ungewöhnlichen Rändern. Gedächtniskolloquium zum Andenken an Prof. Dr.-Ing. Ingolf Teipel, ZARM, Universität Bremen, 17 June 2006.
- (in cooperation with R. Jurisits) Undular hydraulic jumps and bores. Symposium on Recent Advances in Mechanics of Solids and Fluids, Vienna, 4 February 2008.
- (in cooperation with R. Jurisits) Undular hydraulic jumps and bores in turbulent free-surface flows. 1st LACCOTAM Conference on Theoretical and Applied Mechanics, St. Augustine, Trinidad and Tobago, 13-14 February 2008.
- Undular hydraulic jumps and bores. Symposium in Honour of Hans Hornung’s 75th Birthday, Pasadena, California, 20 March 2009.

Doctoral dissertations (supervised by W. Schneider): 37 (cf. below).

RWTH Aachen:

- BASTON, A. (1973): Ebene und achsensymmetrische, reibungsfreie Hyperschallströmung mit hoher Verdichtung in der Kopfwelle eines vorgegebenen Körpers.

TU Wien:

- WINKLER, W. (1977): Stromaufwärtslaufende Wellen in überkritisch strömendem Wasser.
- KECK, H. (1977): Thermokonvektive Wellen unter Berücksichtigung von Kompressibilität, Wandinflüssen und Strahlung.
- FLEISCHHACKER, G. (1978): Experimentelle Untersuchungen über anisotherme turbulente Freistrahlen und Darlegung einer verbesserten Berechnungsmethode.
- POTSCH, K. (1978): Schwache Auftriebseffekte in laminaren, runden vertikalen Freistrahlen.
- SCHNEIDER, G. H. (1979): Kompression und Expansion eines Gases in einem Zylinder als Störproblem.
- MEYER ZUR CAPELLEN, F. (1979): Ausbreitung von Wellen kleiner Amplitude in einem relaxierenden und strahlenden Gas-Teilchen Gemisch.
- TOWFIK, A. A. (1980): Numerische und analytische Untersuchungen von Potentialströmungen mit freier Oberfläche.
- ANESTIS, G. (1981): Eine eindimensionale Theorie der Sedimentation in Absetzbehältern veränderlichen Querschnitts und in Zentrifugen.
- RIEDLER, J. (1981): Ein Beitrag zur Berechnung von Strömungen in Doppelschnecken-Extrudern.
- SMEK, E. (1982): Zweidimensionale, reibungsbehaftete Strömung einer Suspension beim Sedimentationsvorgang in Behältern mit vertikalen Wänden.
- SCHAFLINGER, U. (1983): Experimentelle und theoretische Untersuchungen zur Sedimentation in Behältern mit geneigten Wänden.
- MITSOTAKIS, K. (1984): Effekte 2. Ordnung in laminaren, achsensymmetrischen Freistrahlen.
- WASEL, M. (1984): Gemischte erzwungene und natürliche Konvektion an einer horizontalen Platte.
- ZAUNER, E. (1984): Beiträge zum Einfluss von Auftrieb und Zuströmung auf Freistrahlen. (*Promotion sub auspiciis praesidentis rei publicae.*)
- FUHRMANN, E. (1985): Untersuchung der Wellenausbreitung in der Cochlea unter besonderer Berücksichtigung der Reissnerschen Membran.
- ABU-SHEHADA, M. S. M. (1987): Higher-order matched asymptotic analysis of laminar axisymmetric free jet.
- BERGER, J. (1988): Erstarren von Kunststoffen unter dem Einfluß von Wärmeleitung und Kristallisationskinetik.

- MÖRWALD, K. (1988): Asymptotische Theorie freier turbulenter Scherströmungen. (*Promotion sub auspiciis praesidentis rei publicae.*)
- KÖPPL, A. (1990): Anwendungen von Ratengleichungen auf anisotherme Kristallisation von Kunststoffen.
- MILOJEVIC, D. (1990): Turbulente Strahlen niedriger Reynoldszahl und ihre Wirkung in Strahlpumpen.
- STIBI, H. (1990): Trennen von Suspensionen in Becher- und Zylinderzentrifugen.
- HOHENBICHLER, G. (1991): Verdampfung von Fluiden beim Durchströmen poröser Körper.
- FLEBERGER, G. (1992): Berechnung der turbulenten Gitterströmung mit Hilfe eines iterativen Kopplungsverfahrens.
- ZIERFUSS, R. (1992): Freistrahlen in stationären Wirbelschichten und Festbetten. (*Promotion sub auspiciis praesidentis rei publicae.*)
- HAAS, S. (1994): Achsensymmetrische Quell- und Senkenströmungen.
- NOSHADI, V. (1996): Natural convection flows due to heat dipoles.
- STEHR, H. (1997): Freistrahlen in nicht-newtonschen Flüssigkeiten.
- DIGRUBER, M. (1998): Strömungsvorgänge und Wärmeübergang beim Horizontalbandgießen.
- ANDRE, G. (2000): Computation of the motion of magnetically driven electric arcs in simplified arc chambers.
- RANEGGER, G. (2002): Einfluss der Strömung in Stranggussverteiltern auf den Transport und die Abscheidung von Partikeln. (W. S. succeeded the late Prof. U. Schaflinger in supervising the thesis.)
- GRILLHOFER, W. (2002): Der wellige Wassersprung in einer turbulenten Kanalströmung mit freier Oberfläche.
- ZUNZER, J. (2002): Experimentelle und numerische Untersuchungen zur bewegten Kontaktlinie.
- LINDNER-SILWESTER, T. (2003): Die bewegte Kontaktlinie mit schwachen Reibungseffekten.
- SCHMIDT, H. (2004): Ebene turbulente Trennschichten zwischen ungestörten Parallelströmungen mit kleinen Geschwindigkeitsunterschieden.
- LEIBINGER, H. (2008): Strömungsprozesse und Zustandsänderungen in einem System zur Reinigung von Filterschläuchen.
- JURISITS, R. (2012): Wellige Wassersprünge bei nicht voll ausgebildeter turbulenter Zuströmung.

RESEARCH AREAS (PREVIOUS & *PRESENT*)

- Supersonic and hypersonic flow
- Radiation gas dynamics
- Wave propagation in fluids
- Jets, plumes and free shear layers (laminar or turbulent)
- Wall-bounded turbulent flows
- ***Turbulent free-surface flows***
- Natural and ***mixed convection flows***
- Condensation and evaporation
- Solidification, ***crystallization***
- Fluidization and settling of particles
- Electric arcs

*The results of this research are quoted in standard texts and monographs, cf. M. Van Dyke, *Perturbation Methods in Fluid Mechanics* (2nd Ed.); L. Prandtl et al., *Führer durch die Strömungslehre* (8. u. 9. Aufl.); K. Gersten & H. Herwig, *Strömungsmechanik*; J. Zierep & K. Bühler, *Strömungsmechanik*; H. Herwig, *Strömungsmechanik: Einführung in die Physik technischer Strömungen*; K. Oswatitsch, *Grundlagen der Gasdynamik*; K. Oswatitsch, *Spezialgebiete der Gasdynamik*; J. Zierep, *Theoretische Gasdynamik*; J. Zierep, *Ähnlich-keitsgesetze und Modellregeln der Strömungslehre*; H. Schlichting, *Grenzschicht-Theorie* (8. Aufl.); H. Schlichting & K. Gersten, *Grenzschicht-Theorie* (9. u. 10. Aufl.); H. Schlichting & K. Gersten, *Boundary Layer Theory* (8th Ed.); J. A. Schetz, *Boundary Layer Analysis*; A. Kluwick (Ed.), *Recent Advances in Boundary Layer Theory*; S. B. Pope, *Turbulent Flows*; J. Zierep, *Strömungen mit Energiezufuhr*; F. Bartlmä, *Gasdynamik der Verbrennung*; E. H. Hirschel, *Basics of Aerothermodynamics*; M. Ungarish, *Hydrodynamics of Suspensions*; M. C. Bustos et al., *Sedimentation and Thickening*; M. A. Goldshtik et al., *Viscous Flows with Paradoxical Features* (in Russian); V.V. Sychev et al., *Asymptotic Theory of Separated Flows* (English Translation from Russian); H. Janeschitz-Kriegl, *Crystallization Modalities in Polymer Melt Processing*.*

PUBLICATIONS

Books (author)

- Mathematische Methoden der Strömungsmechanik, Vieweg-Verlag 1978.
- Repetitorium Thermodynamik (unter Mitarbeit von *S. Haas*), Oldenbourg-Verlag 1996. 2nd, revised Ed. 2004.

Books (co-editor)

- Contributions to the Development of Gasdynamics. Selected Papers, translated on the occasion of K. Oswatitsch's 70th birthday. Edited by *W. Schneider* and *M. Platzer*. Vieweg-Verlag 1980.
- Trends in Applications of Mathematics to Mechanics. Edited by *W. Schneider*, *H. Troger* and *F. Ziegler*. Longman Scientific & Technical 1991.

Book (editorial review board)

- Handbook of Fluid Dynamics and Fluid Machinery. Edited by *J. A. Schetz* and *A. E. Fuhs*. Vol. I: Fundamentals of Fluid Dynamics; Vol. II: Experimental and Computational Fluid Dynamics; Vol. III: Applications of Fluid Dynamics. Wiley 1996.

Series (co-editor)

- CISM Courses and Lectures. Springer-Verlag, Wien (1993 - 2008, about 10 volumes per year).

Contributions to books

- Chapter 5 (Konvektive Wärme- und Stoffübertragung) and
- Chapter 6 (Strömungen mit mehreren Phasen) of *L. Prandtl*, Führer durch die Strömungslehre, ed. by *K. Oswatitsch* and *K. Wieghardt*, Vieweg-Verlag. 8th Ed., 1984; 9th Ed., 1990, corrected reprint 1993.
- Thermodynamics and dynamics of a gas containing radiating solid particles. CISM Courses and Lectures 1972, ed. by *J. H. Clarke*, Springer/CISM 1982, pp. 1-66.

Survey papers

- Referat über die Arbeiten auf dem Gebiet der Hyperschallaerodynamik im DVL-Institut für Theoretische Gasdynamik. In: Bericht über die 11. Sitzung des WGL-Ausschusses für Aerodynamik. Deutsche Luft- und Raumfahrt, Mitteilung 67 - 13 (1967).
- Grundlagen der Strahlungsgasdynamik. Acta Mechanica **5**(1968), 85-117.
- Verdichtungsstöße in strahlenden Gasen. Physik. Blätter **26** (1970), 305-312.

- Hyperschallströmungen - Entwicklungsrichtungen der Theorie. In: Übersichtsbeiträge zur Gasdynamik, ed. by *E. Leiter* and *J. Zierep*, Springer-Verlag Wien, 1971, pp. 163-194.
- Strahlungsgasdynamik. 9. Lehrgang für Raumfahrttechnik, Göttingen, 1971.
- Energietransport durch Strahlung. In: Transportgrößen in der Strömungsmechanik, ed. by *E. Hirschel*, Deutsche Versuchsanstalt für Luft- und Raumfahrt, Porz-Wahn, 1973, Vol. II.
- Radiation Gasdynamics of Planetary Entry: Concepts and Recent Advances. *Astronautica Acta* **18** (Suppl.) (1974), 193-213.
- Gasdynamik und Thermodynamik: Verschmelzung zweier Fachgebiete. Antrittsvorlesungen der Technischen Hochschule in Wien, Verlag der Technischen Universität Wien, 1976.
- Strahlungseffekte in Ein- und Mehrphasenströmungen. *Zeitschr. Angew. Math. Mech. (ZAMM)* **56** (1976), T21-T36.
- Mathematical methods in fluid mechanics - General introduction. Von Karman Institute for Fluid Mechanics, Lecture Series 1980 - 4, Rhode Saint Genese, Belgium 1980.
- Mathematical methods in fluid mechanics - Method of multiple scales and related methods. Von Karman Institute for Fluid Mechanics, Lecture Series 1980 - 4, Rhode Saint Genese, Belgium 1980.
- Radiation effects in single-phase and multiphase flows. In: Theoretical and Applied Mechanics (Eds.: *F. P. J. Rimrott* and *B. Tabarrok*), 15th Int. Congress of Theoretical and Applied Mechanics (ICTAM), Toronto, August 1980, pp. 175-188.
- Asymptotic analysis of jet flows. In: Fluid Dynamics Transactions Vol. **12**, Polish Academy of Sciences, Warszawa 1985, pp. 113-155.
- Kinematic wave description of sedimentation and centrifugation processes. In: Flow of Real Fluids (*G. E. A. Meier* and *F. Obermeier*, Eds.), Lecture Notes in Physics Vol. **235**, Springer-Berlin, 1985, pp.326-337.
- Strömungs- und Erstarrungsvorgänge in Metallen und Kunststoffen. In: Konferenzberichte „Mechanik und Industrie“, Institut für Mechanik, Universität Innsbruck 1985, pp. 310-323.
- Boundary-layer theory of free turbulent shear flows. *Z. Flugwiss. Weltraumforsch.* **15** (1991), 143-158.
- Laminar mixed convection flows on horizontal surfaces. Proc. 3rd Caribbean Congress on Fluid Dynamics, Vol. II, Bolivar Univ., Caracas, 1995.
- Introduction to the modelling of industrial fluid flows. *Zeitschr. angew. Math. Mech. (ZAMM)* **76** (1996) S4, 453-456.
- Fluid dynamic modelling of industrial problems. Proc. 3rd Intl. Conf. Fluid Mech., Beijing Institute of Technology Press, 1998, pp. 35 - 37.
- Peculiarities of boundary-layer flows over horizontal plates. In: Applicable Mathematics – Its Perspectives and Challenges (*J. C. Misra*, Ed.), Narosa Publishing House, New Delhi 2001, pp. 118-123.
- Recent developments in modelling continuous casting of steel. In: Interactive Dynamics of Convection and Solidification (*P. Ehrhard* et al., Eds.), Kluwer Academic Publishers, Dordrecht 2001, pp. 135-136.

- (Ed.): Christian Doppler Laboratory of Continuous Solidification Processes 1994-2001. Final Report, Institute of Fluid Mech. Heat Transfer, Vienna University of Technology, 2003.
- Dal Caos all'Ordine: l'Auto-organizzazione della Materia. Atti dell'Accademia Udinese di Scienze Lettere e Arti Vol. **CI**, Anno 2008, Udine 2009, pp. 99-110.

Original research papers

In case of co-authors, names of first authors underlined.

Supersonic and hypersonic flow

- Analytische Berechnung achsensymmetrischer Überschallströmungen mit Stößen. DVL-Bericht Nr. 275 (1963), and Dissertation T. H. Wien, 1963.
- Reibungsfreie Hyperschallströmung um Profile mit scharfer Vorderkante. Acta Mechanica. **1** (1965), 171-193.
- Die Druckverteilung an nicht angestellten Rotationskörpern bei Hyperschallgeschwindigkeiten. Zeitschr. Flugwiss. (ZFW) **13** (1965) 296-304.
- Reibungsfreie Hyperschallströmung eines realen Gases um einen angestellten Kreiskegel. Z. Angew. Math. Mech. (ZAMM) **45** (1965), T172-T175.
- Reibungsfreie Hyperschallströmung eines realen Gases um einen angestellten Kreiskegel. Journal de Mécanique **5** (1966), 45-67.
- Über die Theorie dünner Hyperschall-Störschichten. Deutsche Luft- und Raumfahrt, Forschungsbericht DLR-FB 66-42. (1966).
- Eine analytische Lösung des inversen Problems der Hyperschallströmungen um stumpfe Körper. Z. Angew. Math. Mech. (ZAMM) **47** (1967), T169-T170.
- Über den Einfluß von Wärmezufuhr auf die Hyperschallströmung um Kugel und Kreiszyylinder. Zeitschr. Flugwiss. (ZFW) **16** (1968), 393-400.
- A uniformly valid solution for the hypersonic flow past blunted bodies. J. Fluid Mech. **31** (1968), 397-415. Corrigendum: J. Fluid Mech. **32** (1968), 829.
- Asymptotic behavior of hypersonic flow over blunted slender wedges. AIAA Journal **6** (1968), 2235-2236.
- Reduction of the viscous shock-layer equations to boundary layer equations. California Institute of Technology, Jet Propulsion Laboratory, Technical Report 32-1459 (1970).

Cf. also **Survey Papers** (1967, 1971).

Radiation gas dynamics

- Hypersonic blunt-body flow of a radiating gas at low density. California Institute of Technology, Jet Propulsion Laboratory, Technical Report 32-1451 (1970).

- Effect of radiation on hypersonic stagnation flow at low density. *Zeitschr. Flugwiss. (ZFW)* **18** (1970), 50-58.
- Comment on „Radiative Transfer in the Low Reynolds Number, Blunt-Body Stagnation Region at Hypersonic Speeds“. *AIAA J.* **8** (1970), 1180-1181.
- Viscous blunt-body flow with radiation. *AIAA J.* **9** (1971), 957-958.
- Interaction of Thermal Radiation with the Flow in a Viscous Shock Layer. *Deutsche Luft- und Raumfahrt, Forschungsbericht* 71-89 (1971).
- Radiant interchange among suspended particles and its effect on thermal relaxation in gas-particle mixtures. *Proceedings of the 1972 Heat Transfer and Fluid Mechanics Institute*, ed. by *R. B. Landis* and *G. J. Hordemann*, Stanford Univ. Press, pp.353-370.
- Das Thermometerproblem für eine kleine strahlende Kugel in einem strömenden Medium. *Z. Angew. Math. Mech. (ZAMM)* **52** (1972), 155-159.

Cf. also **Survey Papers** (1968, 1970, 1971, 1973, 1974, 1976, 1980).

Wave propagation in fluids

- Die Ausbreitung räumlicher Stoßwellen von Geschütz-mündungen. *Z. Angew. Math. Mech. (ZAMM)* **46** (1966), T215-T216.
- Die Ausbreitung räumlicher Stoßwellen in ein ruhendes Medium. *Z. Angew. Math. Physik (ZAMP)* **18** (1967), 66-78.
- Über die Ausbreitung des Mündungsknalles. *Deutsche Luft- und Raumfahrt, Forschungsbericht* DLR-FB 67-50 (1967).
- Wärmewellen in einem leitenden und strahlenden Medium. *Zeitschr. angew. Math. u. Physik (ZAMP)* **22** (1971), 517-532.
- Upstream propagation of unsteady disturbances in supersonic boundary layers. *J. Fluid Mech.* **63** (1974), 465-485.
- with *H. Keck*: Thermokonvektive Wellen und ihre Wechselwirkung mit strahlungs-induzierten Wellen. *Zeitschr. angew. Math. Mech. (ZAMM)* **58** (1978), T279-280.
- with *H. Keck*: Thermoconvective waves in a compressible fluid. *Int. J. Heat Mass Transfer* **22** (1979), 1501-1512.
- with *E. Fuhrmann*: Theoretical investigations on waves in fluid-filled tubes separated by membranes. *Proc. Europ. Mech. Coll. 179 on Waves in Fluid-Filled Tubes* (Eds. *H. Buggisch* and *F. Mainardi*), Bologna, 1985, pp. 20-21.
- with *E. Fuhrmann* and *M. Schultz*: Wave propagation in the Cochlea (inner ear): Effects of Reissner's membrane and non-rectangular cross section. *Acta Mechanica* **70** (1987), 15-30.

Cf. also **Survey Papers** (1970, 1976).

Jets, plumes and free shear layers (laminar or turbulent)

- Über den Einfluß der Schwerkraft auf anisotherme, turbulente Freistrahlen. Abhandlungen aus dem Aerodynamischen Institut der Rhein.-Westf. Techn. Hochschule Aachen, Heft 22, Sonderband, pp. 59-65 (1975) (Beitrag auf Einladung).
- with *K. Potsch*: Weak buoyancy in laminar vertical jets. Invited paper in: Recent Developments in Theoretical and Experimental Fluid Mechanics. Edited by *U. Müller, K. G. Roesner, B. Schmidt*. Springer-Berlin, 1979, pp. 501-510.
- with *G. Fleischhacker*: Experimentelle und theoretische Untersuchungen über den Einfluß der Schwerkraft auf anisotherme, turbulente Freistrahlen. Gesundheits-Ingenieur **101** (1980), 129-140. Corrigendum: **104** (1983), 56.
- Flow induced by jets and plumes. *J. Fluid Mech.* **108** (1981), 55-65.
- Comments on a „Study of laminar buoyant jets discharged at an inclination to the vertical buoyancy force“. *Int. J. Heat Mass Transfer* **26** (1983), 1263-1264.
- with *K. Mitsotakis* and *E. Zauner*: Second-order boundary-layer theory of laminar jet flows. *Acta Mech.* **53** (1984), 115-123.
- Impulsstrom in Freistrahlen. *Zeitschr. angew. Math. Mech. (ZAMM)* **65** (1985), T239-T240.
- Decay of momentum flux in submerged jets. *J. Fluid Mech.* **154** (1985), 91-110.
- with *H. J. Böhm* and *E. Zauner*: Numerical investigation of the viscous flow induced by an axisymmetric laminar jet issuing from a plane wall. 4th Intl. Conf. Num. Meth. Lam. Turb. Flow, Swansea, 1985.
- with *E. Zauner* and *H. Böhm*: The recirculatory flow induced by a laminar axisymmetric jet issuing from a wall. *Proc. Intl. Symp. on Jets and Cavities (J. H. Kim et al., Eds.)*, ASME Winter Annual Meeting, Miami Beach, 1985; abbreviated version: *ASME J. Fluids Eng.* **109** (1987), 237-241.
- with *E. Zauner*: Buoyant turbulent jets with mutual hindering. *Fluid Dynamics Research* **1** (1986), 77-89.
- with *K. Mörwald* and *K. Mitsotakis*: Higher-order analysis of laminar plumes. *Proc. 8th Int. Heat Transfer Conf.* (Eds. *C. L. Tien et al.*), Hemisphere, 1986, pp. 1335-1340.
- with *K. Mörwald*: Asymptotic analysis of turbulent free shear layers. *Proc. Intl. Conf. Fluid Mech.*, Beijing Univ. Press, 1987, pp. 50-55.
- with *K. Mitsotakis* and *E. Zauner*: Turbulent jet flows with buoyancy and swirl. *Ingenieur-Archiv* **58** (1988), 161-170.
- with *K. Mörwald*: Asymptotic structure of turbulent free shear layers and implications for turbulence modelling. *Zeitschr. angew. Math. Mech. (ZAMM)* **69** (1989), T626 - T627.
- with *D. Koller-Milojevic*: Free and confined jets at low Reynolds numbers. *Fluid Dynamics Research* **12** (1993), 307-322.
- with *H. Stehr*: Plane jet flows of non-Newtonian fluids. *Trends in Applications of Mathematics to Mechanics* (Eds. *M. D. P. Monteiro Marques* and *J. F. Rodrigues*), pp. 228-234. Pitman Monographs and Surveys in Pure and Applied Mathematics 77. Longman/Wiley 1995.

- with H. Stehr: Submerged jet flows of non-Newtonian fluids. *Zeitschr. angew. Math. Mech. (ZAMM)* **76** (1996) S5, 497-498.
 - with H. Stehr: Jet flows in non-Newtonian fluids. *Z. angew. Math. Phys. (ZAMP)* **51** (2000), 922-941.
- Cf. also **Survey Papers** (1985, 1991).

Wall-bounded turbulent flows

- On modelling the transport of turbulent kinetic energy in Couette flow. *Zeitschr. angew. Math. Mech. (ZAMM)* **69** (1989), T627-T629.
- On Reynolds stress transport in turbulent Couette flow. *Zeitschr. Flugwiss. Weltraumforschung (ZFW)* **13** (1989), 315-319.
- with R. Eder and J. Schmidt: Turbulent Couette flow: asymptotics vs. experimental data. *Proc. 3rd Intl. Congress Fluid Mech. (Eds. A. Nayfeh et al.), Vol IV*, pp.1593-1599. Cairo 1990.
- with S. Haas: Asymptotic analysis of turbulent wall-bounded sink flows. *Zeitschr. angew. Math. Mech. (ZAMM)* **73** (1993), T626-628.
- with G. Fleberger and H. Keck: Zonal computational method for turbulent plane cascade flow. *Acta Mech.* **4** (1994) [Suppl.], 233-240.
- with S. Haas: Axisymmetric turbulent sink flows. *Proc. IUTAM Symp. on Asymptotic Methods for Turbulent Shear Flows at High Reynolds Numbers (Ed. K. Gersten)*, pp. 81-94. Kluwer Acad. Publ. 1996.

Turbulent free-surface flows

- with W. Grillhofer: The undular hydraulic jump in turbulent open channel flow at large Reynolds numbers. *Physics of Fluids* **15** (2003), 730-735.
- with H. Steinrück and W. Grillhofer: A multiple scales analysis of the undular hydraulic jump in turbulent open channel flow. *Fluid Dynamics Research* **33** (2003), 41-55.
- with H. Steinrück: An multiple scales analysis of the undular hydraulic jump in turbulent open channel flow. In: *Shallow Flows – Selected Papers of the International Symposium on Shallow Flows, 16-18 June 2003, Delft (Eds. G. H. Jirka and W. S. J. Uijtewaal)*, pp. 305-306. A.A. Balkema Publishers, Taylor&Francis Group, London, 2004.
- Near-critical free-surface flows. *Proc. 2nd Shanghai Intl. Symp. Nonlin. Sci. Appl., Fudan Univ., Shanghai 2005*, Section 8.6.
- with R. Jurisits and Y. S. Bae: The undular hydraulic jump – analytical and numerical investigations of the free boundary value problem. *Proc. 3rd Shanghai Intl. Symp. Nonlin. Sci. Appl., Fudan Univ., Shanghai 2007*, pp. 90-91.
- with R. Jurisits and Y. S. Bae: A multiple-scales solution of the undular hydraulic jump problem. *PAMM - Proc. Appl. Math. Mech.* **7** (2007), 4120007-4120008/**DOI**

10.1002/pamm.200700755, Wiley-VCH Verlag, Weinheim. Published online at <http://www3.interscience.wiley.com/cgi-bin/fulltext/121560064/PDFSTART>.

- with *R. Jurisits* and *Y. S. Bae*: An asymptotic iteration method for the numerical analysis of near-critical free-surface flows. Proc. Conf. Modelling Fluid Flow (CMFF'09), Department of Fluid Mechanics, Budapest University of Technology and Economics 2009, Vol. I, pp. 364-371. Also: *Int. J. Heat & Fluid Flow* **31** (2010), 1119-1124 (selected conference paper).
- with *R. Jurisits*: Undular hydraulic jumps arising in non-developed turbulent flows. *Acta Mech.* **223** (2012), 1723-1738. DOI 10.1007/s00707-012-0666-4.
- Solitary waves in turbulent open-channel flow. Submitted to *J. Fluid Mech.*

Natural and mixed convection flows

- A similarity solution for combined forced and free convection flow over a horizontal plate. *Int. J. Heat Mass Transfer* **22** (1979), 1401-1406.
- with *E. Zauner*: Ventilation of factory buildings by natural convection. Proc. 5th Coll. Industrial Aerodynamics (Eds. *C. Kramer* and *H. J. Gerhardt*), Fachhochschule Aachen, 1982, pp. 83-93. Also: *J. Wind Eng. Ind. Aerodyn.* **16** (1984), 213-223.
- with *M. G. Wasel*: Breakdown of the boundary-layer approximation for mixed convection above a horizontal plate. *Int. J. Heat Mass Transfer* **28** (1985), 2307-2313.
- with *H. Steinrück* and *G. Andre*: The breakdown of boundary layer computations in case of the flow over a cooled horizontal flat plate. *Zeitschr. angew. Math. Mech. (ZAMM)* **74** (1994), T402-404.
- with *V. Noshadi*: Horizontal jets due to natural convection. *ZAMM* **75** (1995), Suppl. 1, S351-352.
- with *V. Noshadi*: A numerical investigation of mixed convection on a horizontal semi-infinite plate. Invited paper in: *Advances in Fluid Mechanics and Turbomachinery* (Eds. *H. J. Rath* and *C. Egbers*), pp. 87-97. Springer-Berlin 1998.
- with *V. Noshadi*: Natural convection flow far from a horizontal plate. *J. Fluid Mech.* **387** (1999), 227-254.
- Mixed convection at a finite horizontal plate. Proc. 3rd European Thermal Sciences Conf. (Eds.: *E. W. P. Hahne* et al.), Edizioni ETS, Pisa 2000, pp. 195-198.
- Lift, thrust and heat transfer due to mixed convection flow past a horizontal plate of finite length. *J. Fluid Mech.* **529** (2005), 51-69.
- with *M. Müllner*: Laminar mixed convection on a horizontal plate of finite length in a channel of finite width. *Heat and Mass Transfer* **46** (2010), 1097-1110.

Cf. also **Survey Papers** (1995, 2001).

Condensation and evaporation

- Drag of droplets moving through their own vapor. Part I - Continuum flow. Physico Chemical Hydrodynamics **2** (1981), 135-141. Part II - Free Molecule Flow. Physico Chemical Hydrodynamics **3** (1982), 119-126.
- Vapor flow through a porous membrane - A throttling process with condensation and evaporation. Acta Mechanica **47** (1983), 15-25.
- with G. Hohenbichler: Flow of saturated fluids through membranes. ZAMM - Z. angew. Math. Mech. **71** (1991), T475-477. Corrigendum: ZAMM **71** (1991), 364.
- with G. Hohenbichler and A. Köppl: Evaporation of a liquid flowing through a slender porous cylinder. Acta Mech. **107** (1994), 21-32.

Solidification and crystallization

- Transient solidification of a flowing liquid at a heat conducting wall. Int. J. Heat Mass Transfer **23** (1980), 1377-1383.
- A local analysis of solidification in horizontal continuous casting. Arch. Eisenhüttenwesen **54** (1983), 487-490 (invited paper).
- Strömungs- und Erstarrungsvorgänge in Metallen und Kunststoffen. Österr. Ing. Arch. Z. (ÖIAZ) 1986, 168.
- with J. Berger: A zone model of rate controlled solidification. Plastics and Rubber Processing and Applications **6** (1986), 127-133.
- with A. Köppl and J. Berger: Non-isothermal crystallization of polymers. Part 1. System of rate equations. Intern. Polymer Processing **II** (1988), 151-154.
- with J. Berger and A. Köppl: Non-isothermal crystallization of polymers: Application of rate equations. Proc. 1st Intl. Conf. Transport Phenomena in Processing (S. I. Güçeri, Ed.), Technomic Publ. Co., 1992, pp. 1043-1054.
- with H. Steinrück, Ch. Rudischer, Ch. Fürst, G. Xia and K. Mörwald: Modellierung von Strömungen beim Stranggießen. Berg- u. Hüttenmännische Monatshefte (BHM) **141** (1996), 393-398.
- with H. Steinrück and C. Rudischer: Modelling of continuous casting processes. Nonlinear Analysis, Theory, Methods & Applications **30** (1997), 4915-4925. Also: Proc. 2nd World Congr. Nonlin. Anal., Elsevier/Pergamon 1997.
- with H. Steinrück and C. Rudischer: The formation of oscillation marks in continuous casting of steel. Proc. Modeling of Casting, Welding and Advanced Solidification Processes VIII (B. G. Thomas and C. Beckermann, Eds.), The Minerals, Metals & Materials Society, 1998, pp. 639-646.
- with V. Noshadi and A. Kuznetsov: Internal flow and shell solidification in horizontal continuous casting processes. Proc. Modeling of Casting, Welding and Advanced Solidification Processes VIII (B. G. Thomas and C. Beckermann, Eds.), The Minerals, Metals & Materials Society, 1998, pp. 655-662.

- with *M. Digruber* and *S. Haas*: Heat transfer and solidification in horizontal strip casting. Proc. Modeling of Casting, Welding and Advanced Solidification Processes VIII (*B. G. Thomas* and *C. Beckermann*, Eds.), The Minerals, Metals & Materials Society, 1998, pp. 663-670.
- with *V. Noshadi*: Numerical simulation of horizontal continuous casting processes. La Revue de Métallurgie - SF2M - JA 99 (1999), p. 145 (invited paper).
- with *M. Digruber*, *K. Mörwald* and *S. Haas*: Hydraulic analysis of free-surface flows with solidification. Invited Paper, Archive Appl. Mech. (Ing.-Archiv) **70** (2000), 17-29.
- with *V. Noshadi*: Recent progress in the modeling of horizontal continuous casting of steel. Proc. Modeling of Casting, Welding and Advanced Solidification Processes IX (*P. R. Sahm* et al., Eds.), Shaker Verlag, Aachen 2000, pp. 745-752.
- with *C. Buchner*: Explosive crystallization in thin amorphous layers on heat conducting substrates. In: Proc. Int. Heat Transfer Conf. (IHTC14), Washington D.C., 2010, Paper no. IHTC14-22187.
- with *C. Buchner*: Crystallization waves in thin amorphous layers on heat conducting substrates. PAMM – Proc. Appl. Math. Mech. **10** (2010), 493-494/DOI 10.1002/pamm.201010239.

Cf. also **Survey Papers** (1985, 2001, 2003).

Fluidization and settling of particles

- Kinematic-wave theory of sedimentation beneath inclined walls. J. Fluid Mech. **120** (1982), 323-346.
- with *G. Anestis*: Application of the theory of kinematic waves to the centrifugation of suspensions. Ing.-Archiv **53** (1983), 399-407.
- with *G. Anestis* and *U. Schaflinger*: Sediment composition due to settling of particles of different sizes. Int. J. Multiphase Flow **11** (1985), 419-423.
- with *R. Zierfuß*: Jet flows in fluidized beds. Zeitschr. angew. Math. Mech. (ZAMM) **72** (1992), T398-T400.
- with *U. Schaflinger*, *T. Aihara*, *T. Gruber*, *U. Weingerl* and *T. Ohara*: Analysis of particle motion in a very shallow fluidized bed. Int. J. Multiphase Flow **23** (1997), 455-471.
- On the one-dimensional flow approximation in sedimentation processes. Invited paper in: Sedimentation and Sediment Transport, Proc. Symposium Monte Verità 2002 (Eds.: *A. Gyr* and *W. Kinzelbach*), Kluwer 2003, pp. 127-130.

Cf. also **Survey Papers** (1985).

Electric arcs

- with *G. Andre*: A slug model of moving electric arcs. Z. Angew. Math. Mech. (ZAMM) **78** (1998) S1, S231/232.

- with G. Andre and W. Rieder: Simulation der Bewegung magnetisch beblasener Lichtbögen in seitlich dichten Modellschaltern. In: Kontaktverhalten und Schalten, VDE-Fachbericht Bd. 55, 1999, S. 123-132.
- with G. Andre and W. Rieder: Computation of the interaction of a shock wave with an arc squeezed between isolating side walls. Proc. 13th Intl. Conf. on Gas Discharges and their Applications, Local Org. Comm. GD2000 (Ed.), Dept. Electronic & Electrical Eng., Univeristy of Strathclyde, Glasgow 2000, pp. 102-105.
- with G. Andre and W. Rieder: Modelling of arc-gas flow interaction in magnet blast switching devices. Proc. 20th Intl. Conf. on Electrical Contacts (ICEC 2000), KTH Högskoletryckeriet, Stockholm 2000, pp. 79-84.
- with K. Berger, B. Gessl and W. Rieder: Arc Motion and Wave Propagation in Arc Chambers with Lateral Chinks. Proc. 47th IEEE Holm Conference on Electrical Contacts, Montreal, The Institute of Electrical and Electronics Engineers, 2001, pp. 1-5. Also: IEEE Transactions on Components and Packaging Technologies **25**(2002), 440-445.
- with G. Andre, K. Berger, B. Gessl and W. Rieder: Lichtbogenbewegung bei geknickter Laufschiene. In: Kontaktverhalten und Schalten, 17. Fachtagung Albert-Keil-Kontaktseminar, VDE- Fachbericht Nr. 59, VDE-Verlag, Berlin 2003, S. 177-185.

Other topics

- Stromfunktion für instationäre räumliche Strömungen in krummlinigen Koordinaten. Z. Angew. Math. Physik (ZAMP) **17** (1966), 343-348.
- Über die Rolle der Flüssigkeits- und Gaseigenschaften in der Theorie mechanisch ähnlicher Strömungen. Habilitationsschrift, Techn. Hochschule Aachen 1970. Also: Acta Mech. **12** (1971), 275-305.
- Einfluß einer kleinen Biegesteifigkeit auf die Querschwingungen einer eingespannten rechteckigen Membran. Acta Mech. **13** (1972), 293-302.
- A note on a breakdown of the multiplicative composition of inner and outer expansions. J. Fluid Mech. **59** (1973), 785-789.
- with J. Riedler: Viscous flow in corner regions with a moving wall and leakage of fluid. Acta Mech. **48** (1983), 95-102.
- Aufgaben der Ingenieurwissenschaften. Beitrag auf Einladung zu: schaft:wissen; LESE-BUCH (Ed.: Präsidium der Österr. Akademie der Wiss.), Verlag der Österr. Akademie der Wiss., Wien 1997.
- with S. Haas: Wall-bounded laminar sink flows. Acta Mech. **125** (1997), 211-215.
- with T. Lindner-Silwester: The moving contact line with weak viscosity effects – an application and evaluation of Shikhmurzaev’s model. Acta Mechanica **176** (2005), 245-258.
- with T. Lindner-Silwester: Authors’ reply to the Remark on “The moving contact line with weak viscosity effects – an application and evaluation of Shikhmurzaev’s model”. Acta Mechanica **182** (2006), 145-146.

- with *R. Jurisits*: Change of state as a bubble rises in a liquid of constant volume. *Acta Mechanica* **195**(2008), 215-226.
- Comments on M. Mičlavčič and C. Y. Wang, Completely passive natural convection, *ZAMM* **91**/7, 601-606 (2011). *ZAMM* **91** (2011), 1002-1004.

Cf. also **Survey Papers** (1976, 1980, 1996, 1998).

Book reviews

- *J. Zierep: Theoretische Gasdynamik. Z. Flugwiss.* **21** (1973), 108-109.
- *C. Ferrari: Lectures on Radiating Gasdynamics. Z. Flugwiss.* **24** (1976), 115.
- *J. Zierep: Theoretische Gasdynamik (3. Aufl.). Z. Flugwiss.* **24** (1976), 359.
- *K. Robert (Hrsg.): Nichtgleichgewichtsprobleme in der Strömungsmechanik. Z. Flugwiss. Weltraumforsch.* **1** (1977), 72.
- *J. Zierep, H. Oertel (Eds.): Symposium Transsonicum III. Z. Flugwiss. Weltraumforsch.* **14** (1990), 202.
- *M. Ungarish: Hydrodynamics of Suspensions - Fundamentals of Centrifugal and Gravity Separation. Int. J. Multiphase Flow* **20** (1994), 1169.
- *I. Müller: Thermodynamik. Z. angew. Math. Physik (ZAMP)* **51** (2000), 844.
- *S. B. Pope: Turbulent Flows. Z. angew. Math. Mech. (ZAMM)* **81** (2001), 838.
- *B. E. Launder, N. D. Sandham (Eds.): Closure Strategies for Turbulent and Transitional Flows. Z. angew. Math. Mech. (ZAMM)* **84** (2004), 358-359.

Biographies, Laudatory Speeches, etc.

- Klaus Oswatitsch 70 Jahre. *ZAMM* **60** (1980), 220.
- Klaus Oswatitsch: his scientific career and work. In: Contributions to the Development of Gasdynamics, Selected Papers, translated on the occasion of K. Oswatitsch's 70th birthday, edited by *W. Schneider* and *M. Platzer*, Vieweg-Verlag 1980.
- Obituary for Professor Klaus Oswatitsch. *Fluid Dynamics Research* **13** (1993), 65-66.
- Professor Dr.-Ing. Dr. techn. E.h. Jürgen Zierep. *Acta Mech.* (1994) [*Suppl.*] 4, V-VI.
- Laudatio für Prof. Dr.-Ing. Dr. techn. E.h. J. Zierep anlässlich der Verleihung des Ludwig-Prandtl-Ringes am 5. 10. 1998 in Bremen. *Mitteilungen* 1/99, Deutsche Ges. f. Luft- u. Raumfahrt - Lilienthal - Oberth (DGLR), S. 4-6.
- Begründung zum Antrag auf Ernennung von Prof. Dr.-Ing. Dr. techn. E.h. J. Zierep zum Ehrenmitglied der GAMM. *GAMM-Rundbrief* 1999/2, S. 28-30.
- Kluwick, Alfred – im Jahr 2000 neugewähltes korr. Mitglied der math.-nat. Klasse. *Almanach* **150** (1999/2000), Österr. Akad. d. Wiss., S. 122.
- Prandtl's „Führer durch die Strömungslehre“ - 40 Jahre erlebte Geschichte eines Buches. In: Ludwig Prandtl, ein Führer in der Strömungslehre, Hrsg. G. E. A. Meier, Vieweg-Verlag 2000, S. 205 – 217.

- Laudatio für Dr. M. Rein anlässlich der Verleihung des Richard-von-Mises-Preises. GAMM-Rundbrief 2000-2.
- with *H. Troger* and *F. Ziegler*: Editorial on *J. Zierep*. *Acta Mechanica* **146** (2001), No. 3-4.
- Laudatio für Prof. H. Steinrück anlässlich der Verleihung des Richard-von-Mises-Preises. GAMM-Rundbrief 2001-2.
- Kluwick, Alfred – im Jahr 2003 neugewähltes wirkl. Mitglied der math.-nat. Klasse. *Almanach* **153** (2002/2003), Österr. Akad. d. Wiss., S. 120.
- Geleitwort zu „Technikfolgenabschätzung in der österreichischen Praxis - Festschrift für Professor Gunther Tichy“, Hrsg. M. Nentwich und W. Peissl. Verlag der Österreichischen Akademie der Wissenschaften 2005.
- „Mindestens einer muss ein Engel sein“, Auszug aus der Laudatio anlässlich des 70. Geburtstages von Hannes Androsch. In: „Hannes Androsch – Im Wendekreis der Weltwirtschaft“, Hrsg. B. Mauhart, echomedia verlag, Wien 2008, S. 83-89.
- Pyzalla, Anke Rita – im Jahr 2008 neugewähltes korr. Mitglied im Ausland der math.-nat. Klasse. *Almanach* **158** (2008), Österr. Akad. d. Wiss., S. 152.
- Foreword to “Instabilities of Flows: With and Without Heat Transfer and Chemical Reaction”, T. Sengupta (Ed.), CISM Courses and Lectures no. 517, Springer – Vienna, 2010.
- Laudatio für Alfred Kluwick. TU Wien, 15. Okt. 2010. Festschrift anlässlich der Emeritierung von Prof. Alfred Kluwick (Hrsg. S. Braun), Inst. f. Strömungsmechanik und Wärmeübertragung, TU Wien, 2011, S. 2-4.
- Bemerkungen zu Alfred Kluwicks wissenschaftlichem Werk. Festansprache, TU Wien, 10. Dez. 2010. Festschrift anlässlich der Emeritierung von Prof. Alfred Kluwick (Hrsg. S. Braun), Inst. f. Strömungsmechanik und Wärmeübertragung, TU Wien, 2011, S. 13-17.