References

Adams, R.A. (1975) *Sobolev Spaces.* Academic Press, New York–San Francisco–London.

Alt, H.W. (1992) *Lineare Funktionalanalysis* (2nd edition). Springer–Verlag, Berlin–Heidelberg–New York (in German).

Amann, H. (1990) *Ordinary Differential Equations. An Introduction to Nonlinear Analysis.* W. de Gruyter, Berlin–New York.

Amann, H. (1994) Stability of the rest state of a viscous incompressible fluid. *Arch. Rat. Mech. Anal.* **126**, 231–242.

Andrews, G. (1980) On the existence of solution to the equation $u_{tt} = u_{xxt} + \sigma(u_x)_x$. *J. Diff. Eq.* **35**, 200–231.

Anzelotti, G. and Giaquinta, M. (1980) Existence of the displacement field for an elasto-plastic body subject to Hencky's law and von Mises yield condition. *Manuscripta Math.* **32**, 101–136.

Appel, J. (1987) The superposition operator in function spaces—a survey. Report no. 141, Institut für Mathematik, Universität Augsburg.

Appel, J. and Zabrejko, P.P. (1990) *Nonlinear Superposition Operators.* Cambridge University Press, Cambridge–New York–Melbourne.

Babin, A.V. and Vishik, M.I. (1991) *Attractors of Evolution Equations.* North–Holland, Amsterdam–New York–Oxford–Tokyo.

Balder, E.J. (1984) A general approach to lower semicontinuity and lower closure in optimal control theory. *SIAM J. Control and Optimization* **22**, 570–598.

Ball, J.M. (1989) A version of the fundamental theorem for Young measures. In: *PDEs and Continuum Models of Phase Trans.*, Lecture Notes in Physics, Vol. 344, Rascle, M., Serre, D. and Slemrod, M. (eds), Springer–Verlag, Berlin–Heidelberg–New York, 241–259.

Bardos, C., Le Roux, A.Y. and Nedelec, J.C. (1979) First order quasilinear equations with boundary conditions. *Comm. in P.D.E.* **4**(9), 1017–1034.

Bellout, H., Bloom, F. and Nečas, J. (1993) Solutions for incompressible non-Newtonian fluids. *C. R. Acad. Sci. Paris* **317**, Série I, 795–800.

Bellout, H., Bloom, F. and Nečas, J. (1994) Young measure-valued solutions for non-Newtonian incompressible fluids. *Comm. in P.D.E.* **19** (11 & 12), 1763–1803.

Benzoni-Gavage, S. and Serre, D. (1993) Existence of solutions for a class of hyperbolic systems of p conservation laws ($p \geq 3$). In: *Nonlinear Hyperbolic Problems—Theoretical, Applied and Computational Aspects*, (Taormina 1992), Notes Num. Fluid Mech. **43**, Vieweg, Braunschweig, 56–61.

Bergh, J. and Löfström, J. (1976) *Interpolation Spaces. An Introduction.* Grundlehren der Math. Wissensch., Bd. 223, Springer-Verlag, Berlin-Heidelberg-New York.

Böhme, G. (1987) *Non-Newtonian Fluid Mechanics.* North–Holland, New York–Amsterdam–Oxford–Tokyo.

Bourbaki, N. (1965/1967) *Intégration.* Hermann, Paris (Nauka, Moskva) (in French/Russian).

Brio, M. (1988) Admissibility conditions for weak solutions of nonstrictly hyperbolic systems. In: *Nonlinear Hyperbolic Equations—Theory, Comput. Methods and Applications*, Ballmann, J. and Jeltsch, R. (eds), Notes on Num. Fluid Mech. **24**, 43–50.

Chadwick, P. (1976) *Continuum Mechanics.* George Allen & Unwin Ltd, London.

Chang, T. and Hsiao, L. (1989) *The Riemann Problem and Interaction of Waves in Gas Dynamics.* Pitman monographs and surveys in Pure and Applied Math., Vol. 41, Longman, New York.

Chorin, A.J. (1984) An introduction to Euler's equations for an incompressible fluid. In: *Seminar on Nonlinear PDE*, Chern, S. (ed.), Springer-Verlag, Berlin–Heidelberg–New York, 31–36.

Chorin, A.J. and Marsden, J.E. (1992) *A Mathematical Introduction to Fluid Mechanics* (third edition). Springer–Verlag, Berlin–Heidelberg–New York.

Cockburn, B., Coquel, F., Le Floch Ph. and Shu, C.W. (1991) Convergence of finite volume methods. IMA Preprint # 771 (submitted to *SIAM J. Numer. Anal.*).

Cockburn, B., Gripenberg, G. and Londen S.-O. (1995) On convergence to entropy solutions of a single conservation law. Preprint # 66, University of Helsinki, Dept. of Math. (to appear in *Journal of Differential Equations*).

Coddington, E. A. and Levinson, N. (1955) *Theory of Ordinary Differential Equations.* McGraw–Hill Book Company, New York–Toronto–London.

Coleman, B.D., Markowitz, H. and Noll, W. (1966) *Viscometric Flows of Non–Newtonian Fluid.* Springer–Verlag, New York.

Constantin, P. and Foias, C. (1985) Global Lyapunov exponents, Yorke formulas and the dimension of the attractors for 2D Navier–Stokes equations. *Comm. Pure Appl. Math.* **38**, no. 1, 1–27.

Constantin, P. and Foias, C. (1988) *Navier-Stokes Equations.* The University of Chicago Press, Chicago.

Coquel, F. and Le Floch, P. (1991) Convergence of finite difference schemes for conservation laws in several space dimensions: the corrected antidiffusive flux approach. *Math. Comp.* **57**, 169–210.

Courant, R. and Friedrichs, K. (1948) *Supersonic Flow and Shock Waves.* Interscience, New York.

Dacorogna, B. (1982) *Weak Continuity and Weak Lower Semicontinuity of Non-linear Functionals.* Lecture Notes in Math. 922, Springer–Verlag, Berlin–Heidelberg–New York.

Dafermos, C.M. (1977a) Characteristics in hyperbolic conservation laws. In: *Non-linear Anal. and Mech.*, Heriott–Watt Symp. Vol. I, Knops, R.J. (ed.), Research Notes in Math. 17, Pitman, Boston–London–Melbourne, 1–58.

Dafermos, C.M. (1977b) Generalized characteristics and the structure of solutions of hyperbolic conservation laws. *Indiana Univ. Math. J.* **26**, 1097–1119.

Dafermos, C.M. (1983) Hyperbolic systems of conservation laws. In: *Systems of Nonlinear PDE*, Ball, J.M. (ed.), D. Reidel Publ. Comp., 25–70.

Dafermos, C.M. (1989) Generalized characteristics in hyperbolic systems of conservation laws. *Arch. Rat. Mech. Anal.* **107**, no. 2, 127–155.

Dafermos, C.M. and Hrusa, W.J. (1985) Energy methods for quasilinear hyperbolic initial-boundary value problems, Applications to elastodynamics. *Arch. Rat. Mech. Anal.* **87**, 267–292.

DiPerna, R.J. (1973a) Existence in the large for quasilinear hyperbolic conservation laws. *Arch. Rat. Mech. Anal.* **52**, 244–257.

DiPerna, R.J. (1973b) Global solutions to a class of nonlinear hyperbolic systems of equations. *Comm. Pure Appl. Math.* **26**, 1–28.

DiPerna, R.J. (1977) Decay of solutions of hyperbolic systems of conservation laws with a convex extension. *Arch. Rat. Mech. Anal.* **64**, 1–46.

DiPerna, R.J. (1979) Uniqueness of solutions to hyperbolic conservation laws. *Indiana Univ. Math. J.* **28**, 137–188.

DiPerna, R.J. (1983) Generalized solutions to conservation laws. In: *Systems of Nonlinear PDE*, Ball, J.M. (ed.), D. Reidel Publ. Comp., 305–309.

DiPerna, R.J. (1985) Measure-valued solutions to conservation laws. *Arch. Rat. Mech. Anal.* **88**, 223–270.

DiPerna, R.J. and Lions, P.L. (1988) Global weak solutions of kinetic equations. *Rend. Sem. Mat. Univers. Politech. Torino* **46**, 3, 259–288.

DiPerna, R.J. and Lions, P.L. (1989) Ordinary differential equations, transport theory and Sobolev spaces. *Invent. Math.* **98**, 511–547.

DiPerna, R.J. and Majda, A. (1987a) Concentrations in regularizations for 2D incompressible flow. *Comm. Pure Appl. Math.* **40**, 301–345.

DiPerna, R.J. and Majda, A. (1987b) Oscillations and concentrations in weak solutions of the incompressible fluid equations. *Comm. Math. Phys.* **108**, 667–689.

DiPerna, R.J. and Majda, A. (1988) Reduced Hausdorff dimension and concentration-cancellation for 2D incompressible flow. *Jour. Am. Math. Soc.* **1**, no. 1, 59–95.

Du, Q. and Gunzburger, M.D. (1991) Analysis of a Ladyzhenskaya model for incompressible viscous flow. *J. of Math. Anal. and App.* **155**, 21–45.

Dubois, F. and Le Floch, P. (1988) Boundary conditions for nonlinear hyperbolic systems of conservation laws. *J. Diff. Eq.* **71**, 93–122.

Duff, G.F.D. (1990a) On derivative estimates for the Navier-Stokes equations in $\mathbf{R}^3$. *C.R. Math. Rep. Acad. Sci. Canada* **12**, no. 2–3, 81–86.

Duff, G.F.D. (1990b) Derivative estimates for the Navier-Stokes equations in a three dimensional region. *Acta Math.* **164**, 145–210.

Dunford, N. and Schwartz, J. (1958) *Linear Operators*, Vols 1–3. Interscience, New York.

Dunn, J.E. and Rajagopal, K.R. (1995) Fluids of differential type: Critical review and thermodynamic analysis. *Int. J. Engng. Sci.* **33**, p. 689.

Ebin, D.G. and Saxton, R.A. (1986) The initial-value problem for elastodynamics of incompressible bodies. *Arch. Rat. Mech. Anal.* **94**, 15–38.

Eden, A., Foias, C. and Temam, R. (1991) Local and global Lyapunov exponents. *J. of Dynamics and Diff. Eq.* **3**, no. 1, 133–177.

Edwards, R.E. (1965) *Functional Analysis.* Holt, Rinehart and Winston, Inc., New York–Montreal–London.

Evans, L.C. (1990) *Weak Convergence Methods for Nonlinear Partial Differential Equations.* C.B.M.S. 74, Amer. Math. Soc., Providence, Rhode Island.

Federer, H. (1969) *Geometric Measure Theory.* Grundlehren der mathematischen Wissenschaften 153, Springer–Verlag, Berlin–Heidelberg–New York.

Feistauer, M. (1993) *Mathematical Methods in Fluid Mechanics.* The Pitman Monographs and Surveys in Pure and Applied Mathematics 67, Longman Scientific and Technical Series, Essex.

Fernandez, G. (1988) Implicit conservative upwind schemes for strongly transient flows. Repports de Recherche no. 873, INRIA, Paris.

Foias, C., Guiloppé, C. and Temam, R. (1981) New a priori estimates for Navier-Stokes equations in dimension 3. *Comm. in P.D.E.* **6**, 329–359.

Fuchs, M. (1994) On stationary incompressible Norton fluids and some extensions of Korn's inequality. *Zeitschr. Anal. Anwendungen* **13**(2), 191–197.

Gajewski, H., Gröger, K. and Zacharias, K. (1974) *Nichtlineare Operatorgleichungen und Operatordifferentialgleichungen.* Akademie–Verlag, Berlin (in German).

Galdi, G.P. (1994a) *An Introduction to the Mathematical Theory of the Navier-Stokes Equations – Vol. I.* Springer Tracts in Natural Philosophy, Springer–Verlag, Berlin–Heidelberg–New York.

Galdi, G.P. (1994b) *An Introduction to the Mathematical Theory of the Navier-Stokes Equations – Vol. II.* Springer Tracts in Natural Philosophy, Springer–Verlag, Berlin–Heidelberg–New York.

Galdi, G.P. (1995) Mathematical theory of second-grade fluids. In: *Stability and Wave Propagation in Fluids and Solids*, Galdi, G.P. (ed.), CISM Courses and Lectures No. 344, Springer–Verlag, Wien–New York, 67–104.

Ghidaglia, J.M. (1990) Inertial manifolds and attractors of partial differential equations. In: *Partially Integrable Evolution Equations in Physics*, Conte, R. and Boccara, N. (eds), Kluwer Academic Publishers, New York, 435–458.

Giga, Y. and Sohr, H. (1991) Abstract L^p-estimates for the Cauchy problem with applications to the Navier-Stokes equations in exterior domains. *J. Funct. Anal.* **102**, no. 1, 72–94.

Girault, V. and Raviart, P.A. (1986) *Finite Element Methods for Navier-Stokes Equations.* SCM **5**, Springer-Verlag, Berlin.

Giusti, E. (1984) *Minimal Surfaces and Functions of Bounded Variation.* Monographs in Mathematics, Vol. 80, Birkhäuser, Basel–Boston–Stuttgart.

Gobert, J. (1962) Une inéquation fondamentale de la théorie de l'élasticité (A fundamental inequality in elasticity theory). *Bull. Soc. Roy. Sci. Liège* **3–4**, 182–191.

Gobert, J. (1971) Sur une inégalité de coercivité (On an inequality related to coercivity). *J. Math. Anal. Appl.* **36**, 518–528.

Godlewski, E. and Raviart, P.A. (1991) *Hyperbolic Systems of Conservation Laws.* Mathematiques & Applications, S.M.A.I., Ellipses, Paris (in English).

Goldstein, S. (1963) *Modern Developments in Fluid Dynamics.* Oxford University Press, Oxford.

Guillopé, C. and Saut, J.-C. (1990) Global existence and one-dimensional nonlinear stability of shear motions of viscoelastic fluids of Oldroyd type. *Mathematical Modelling and Numerical Analysis* **24**, no. 3, 369–401.

Guillopé, C. and Saut, J.-C. (1992) Mathematical problems arising in differential models for viscoelastic fluids. In: *Mathematical Topics in Fluid Mechanics*, Rodrigues, J.F. and Sequeira, A. (eds), Pitman Research Notes in Mathematics Series 274, Longman Scientific & Technical, Essex.

Hakim, A. (1994) Mathematical aspects of viscoelastic fluids of White-Metzner type. *J. Math. Anal. Appl.* **185**, 675–705.

Hewitt, E. and Stromberg, K. (1965) *Real and Abstract Analysis.* Springer–Verlag, Berlin–Heidelberg–New York.

Hills, R.N. and Roberts, H.P. (1991) On the motion of a fluid that is incompressible in a generalized sense and its relationship to the Boussinesq approximation. *Stability and Applied Analysis of Continuous Media* **1**, 205–212.

Hlaváček, I. and Nečas, J. (1970) On inequalities of Korn's type, I. Boundary-Value Problems for Elliptic Systems of PDEs, II. Applications to Linear Elasticity. *Arch. Rat. Mech. Anal.* **36**, 305–311 (part I), 312–334 (part II).

Hopf, E. (1950) The partial differential equation $u_t + uu_x = \mu u_{xx}$. *Comm. Pure Appl. Math.* **3**, 201–230.

Hrusa, W.J. and Nohel, J.A. (1983) Global existence and asymptotics in one-dimensional nonlinear elasticity. In: *Trends and Applications of Pure Mathematics*, Ciarlet, P.G. and Roseau, M. (eds), Springer–Verlag, New York, 165–187.

Hrusa, W.J. and Renardy, M. (1988) An existence theorem for the Dirichlet problem in the elastodynamics of incompressible materials. *Arch. Rat. Mech. Anal.* **102**, 95–119.

Hughes, T.J.R., Kato, T. and Marsden, J.E. (1977) Well-posed quasi-linear second-order hyperbolic systems with application to nonlinear elastodynamics and general relativity. *Arch. Rat. Mech. Anal.* **63**, 273–294.

Hughes, T.J.R. and Marsden, J.E. (1983) *Mathematical Foundations of Elasticity.* Prentice Hall, New Jersey.

Huilgol, R.R. (1975) *Continuum Mechanics of Viscoelastic Liquids.* Hindusthan Publishing Corporation, Delhi.

Jorgens, K. (1961) Das Anfangswertproblem im Grossen für eine Klasse nichtlinearer Wellengleichungen. *Math. Zeit.* **77**, 295–308.

Kaniel, S. (1970) On the initial value problem for an incompressible fluid with nonlinear viscosity. *J. Math. Mech.* **19**, no. 8, 681–707.

Kinderlehrer, D. and Pedregal, P. (1991) Characterizations of Young measures generated by gradients. *Arch. Rat. Mech. Anal.* **115**, 329–365.

Kinderlehrer, D. and Pedregal, P. (1992a) Weak convergence of integrands and the Young measure representation. *SIAM J. Math. Anal.* **23**, no. 1, 1–19.

Kinderlehrer, D. and Pedregal, P. (1992b) Remarks about gradient Young measures generated by sequences in Sobolev spaces. Carnegie-Mellon Research Report no. 92-NA-007.

Kinderlehrer, D. and Stampacchia, G. (1980) *An Introduction to Variational Inequalities and their Applications.* Academic Press, New York–London–Toronto–Sydney–San Francisco.

Kjartanson, B.H. (1986) Pressuremeter creep testing in laboratory ice. PhD Thesis, Univ. Manitoba, Winnipeg, Canada.

Kjartanson, B.H., Shields, D.H., Domaschuk, L. and Man, C.-S. (1988) The creep of ice measured with the pressuremeter. *Can. Geotech. J.* **25**, 250–261.

Kondratiev, V.A. and Oleinik, O.A. (1989) On Korn's inequalities. *C. R. Acad. Sci. Paris* **308**, Série I, 483–487.

Krasnoselskii, M.A. and Rutickii, J.B. (1958/1961) *Convex Functions and Orlicz Spaces.* GITL, Moscow (Noordhoff, Groningen), (in Russian/English).

Kröner, D. (1996) *Numerical Schemes for Conservation Laws.* (A monograph to appear by Teubner, Leipzig–Stuttgart.)

Kröner, D. and Rokyta, M. (1994) Convergence of upwind finite volume schemes for scalar conservation laws in 2D. *SIAM J. Numer. Anal.* **31**, no. 2, 324–343.

Kröner, D. and Zajaczkowski, W. (1996) Measure-valued solutions of the Euler equations for ideal compressible polytropic fluids. Preprint no. 311, SFB 256, Universität Bonn (1993) (to appear in *Math. Meth. in the Appl. Sc.*).

Kružkov, S.N. (1970) First order quasilinear equations in several independent variables. *Math. USSR Sbornik* **10**, no. 2, 217–243 (in English).

Kružkov, S.N. and Panov, E.Y. (1991) Conservative quasilinear first-order laws with an infinite domain of dependence on the initial data. *Soviet Math. Dokl.* **42**, no. 2, 316–321 (in English).

Kufner, A., John, O. and Fučík, S. (1977) *Function Spaces.* Academia, Prague.

Ladyzhenskaya, O.A. (1968) O modifikacijach uravnenij Navje-Stoksa dlja bolsich gradientov skorosti (On modifications of Navier-Stokes equations for large gradients of the velocity). *Zapiski naukhnych seminarov LOMI* **5**, 126–154 (in Russian).

Ladyzhenskaya, O.A. (1969) *The Mathematical Theory of Viscous Incompressible Flow.* Gordon and Beach, New York.

Ladyzhenskaya, O.A. (1970a) New equations for the description of the viscous incompressible fluids and solvability in the large of the boundary value problems for them. In: *Boundary Value Problems of Mathematical Physics V.*, Amer. Math. Soc., Providence, Rhode Island.

Ladyzhenskaya, O.A. (1970b) Modification of the Navier-Stokes equations for the large velocity gradients. In: *Boundary Value Problems of Mathematical Physics and Related Aspects of Function Theory II.*, Consultants Bureau, New York, 57–59.

Ladyzhenskaya, O.A. (1972) On the dynamical system generated by the Navier-Stokes equations. *Zapiski Nauchnykh Seminarov LOMI* **27**, 91–114, English translation in *J. of Soviet Math.* **3**(1975), 458–479.

Ladyzhenskaya, O.A. (1985) On the finiteness of the dimension of bounded invariant sets for the Navier-Stokes equations and other related dissipative systems. *J. Soviet Math.* **28**, no. 5, 714–725.

Ladyzhenskaya, O.A., Solonnikov, V.A. and Uraltzeva, N.N. (1968) *Linear and Quasilinear Equations of Parabolic Type*. Translation of Mathematical Monographs, Vol. 23, Providence, Rhode Island.

Landau, L. and Lifshitz, E. (1959) *Fluid Mechanics*. Pergamon Press, Oxford.

Lax, P.D. (1954) Weak solutions of nonlinear hyperbolic equations and their numerical computation. *Comm. Pure Appl. Math.* **7**, 159–193.

Lax, P.D. (1957) Hyperbolic systems of conservation laws II. *Comm. Pure Appl. Math.* **10**, 537–566.

Lax, P.D. (1971) Shock waves and entropy. In: *Contributions to Nonlinear Funct. Analysis*, Zarontonello E.A. (ed.), Academic Press, New York–San Francisco–London, 603–634.

Lax, P.D. (1973) *Hyperbolic Systems of Conservation Laws and the Mathematical Theory of Shock Waves*. Regional Conf. Series in Appl. Math., SIAM, Philadelphia, USA.

Le Floch, P. (1988) Explicit formula for scalar non-linear conservation laws with boundary condition. *Math. Meth. in the Appl. Sci.* **10**, 265–287.

Leigh, D.C. (1968) *Nonlinear Continuum Mechanics*. McGraw–Hill, New York.

Leray, J. (1934) Sur le mouvement d'un liquide visqueux emplissant l'espace. *Acta Math.* **63**, 193–248.

Le Roux, A.Y. (1977) Etude du problème mixte pour une équation quasilinéaire du premier ordre. *C.R. Acad. Sci. Paris*, série A, **285**, 351–354 (in French).

Lions, J.L. (1969) *Quelques Méthodes de Résolution des Problèmes aux Limites Non Linéaires*. Dunod, Paris (in French).

Lions, J.L. and Magenes, E. (1972a) *Non-Homogenous Boundary Value Problems and Applications I*. Springer–Verlag, Berlin–Heidelberg–New York (in English).

Lions, J.L. and Magenes, E. (1972b) *Non-Homogenous Boundary Value Problems and Applications II*. Springer–Verlag, Berlin–Heidelberg–New York (in English).

Lions, P.L. (1993a) Existence globale de solutions pour les équations de Navier Stokes compressibles isentropiques. *C.R. Acad. Sci. Paris* **317**, Serie I, 115–120.

Lions, P.L. (1993b) Compacité des solutions des équations de Navier Stokes compressibles isentropiques. *C.R. Acad. Sci. Paris* **316**, Serie I, 1335–1340.

MacCamy, R.C. (1970) Existence, uniqueness and stability of $u_{tt} = (\sigma(u_x) + \lambda(u_x)u_{xt})_x$. *Indiana Univ. Math. J.* **20**, 231–338.

Málek, J. and Nečas, J. (1994) A finitedimensional attractor for three-dimensional flow of incompressible fluids. Preprint no. 326, SFB 256, Univ. Bonn (accepted in *J. Diff. Eq.*).

Málek, J., Nečas, J. and Novotný, A. (1992) Measure-valued solutions and asymptotic behaviour of a multipolar model of a boundary layer. *Czechoslovak Math. J.* **42**(117), 549–576.

Málek, J., Nečas, J. and Růžička, M. (1993) On the non-Newtonian incompressible fluids. *Math. Models and Methods in Appl. Sci.* **3**, no. 1, 35–63.

Málek, J., Nečas, J. and Růžička, M. (1996) On weak solutions to a class of non-Newtonian incompressible fluids in bounded domains (to appear).

Málek, J., Rajagopal, K.R. and Růžička, M. (1995) Existence and regularity of solutions and stability of the rest state for fluids with shear dependent viscosity. *Math. Models and Methods in Appl. Sci.* **5**, no. 6, 789–812.

Málek, J., Růžička, M. and Thäter G. (1994) Fractal dimension, attractors and Boussinesq approximation in three dimensions. *Acta Applicandae Mathematicae* **37**, 83–97.

Malevsky, A.V. and Yuen, D.A. (1991) Strongly chaotic non-Newtonian mantle convection. Preprint 91-61, Army High Performance Computing Research Center, University of Minnesota, Minneapolis, USA.

Man, C.-S. (1992) Nonsteady channel flow of ice as a modified second-order fluid with power-law viscosity. *Arch. Rat. Mech. Anal.* **119**, 35–57.

Man, C.-S. and Sun, Q.-X. (1987) On the significance of normal stress effects in the flow of glaciers. *J. Glaciology* **5**(33), 268–273.

Matušů-Nečasová, Š. and Novotný, A. (1994) Measure-valued solution for non-Newtonian compressible isothermal monopolar fluid. *Acta Appl. Math.* **37**, No. 1–2, 109–128.

Murat, F. (1978) Compacité par compensation. *Ann. Scuola Norm. Sup. Pisa, Sci. Fis. Math.* **5**, 489–507.

Nečas, J. (1966) Sur les normes équivalentes dans $W_p^k(\Omega)$ et sur la coercivité des formes formellement positives. In: *Séminaire Equations aux Dérivées Partielles*, Les Presses de l´Université de Montréal, Montréal, 102–128.

Nečas, J. (1967) *Les Méthodes Directes en la Thèorie des Equations Elliptiques.* Academia (Masson), Prague (Paris).

Nečas, J. (1983/1986) *Introduction to the Theory of Nonlinear Elliptic Equations.* Teubner Verlag (J. Wiley), Leipzig (Chichester).

Nečas, J. (1991) Theory of multipolar viscous fluids. In: *The Mathematics of Finite Elements and Applications VII*, MAFELAP 1990, Whiteman, J.R. (ed.), Academic Press Limited, Harcourt Brace Jovanovich Publishers, London–San Diego–New York, 233–244.

Nečas, J. and Hlaváček, I. (1981) *Mathematical Theory of Elastic and Elasto-plastic Bodies: An Introduction.* Studies in Applied Mechanics, 3, Elsevier Scientific Publishing Co., Amsterdam–New York.

Nečas, J. and Novotný, A. (1991) Some qualitative properties of the viscous compressible multipolar heat conductive flow. *Comm. P.D.E.* **16** (2&3), 197–220.

Nečas, J., Novotný, A. and Šilhavý, M. (1989) Global solution to the ideal compressible heat-conductive fluid. *Comment. Math. Univ. Carolinae* **30, 3**, 551–564.

Nečas, J., Novotný, A. and Šilhavý, M. (1990) Global solution to the compressible isothermal multipolar fluid. *J. Math. Anal. Appl.* **162**, 223–241.

Nečas, J. and Šilhavý, M. (1991) Multipolar viscous fluids. *Quart. Appl. Math.* **49**, 247–265.

Neustupa, J. (1993) Measure-valued solutions of the Euler and Navier-Stokes equations for compressible barotropic fluids. *Math. Nachr.* **163**, 217–227.

Nikolskij, S.M. (1975) *Approximations of Functions of Several Variables and Imbedding Theorems.* Grundlehren der math. Wissenschaften Bd. 205, Springer–Verlag, Berlin–Heidelberg–New York.

Nitsche, J.A. (1981) On Korn's second inequality. *R.A.I.R.O., Analyse Numerique* **15**, no. 3, 237–248.

Novotný, A. (1992) Viscous multipolar fluids—Physical background and mathematical theory. *Fortschritte der Physik* **40**(5), 445–517.

Novotný, A. (1995) Compactness of steady compressible isentropic Navier-Stokes equations via the decomposition method (in the whole $\mathbf{R}^3$). (to appear in the Proceedings of 'Navier-Stokes equations, theory and numerical methods', Oberwolfach 1994).

Novotný, A. (1996) Some remarks to the compactness of steady compressible isentropic Navier-Stokes equations via the decomposition method (accepted in *CMUC*).

Novotný, A. and Padula, M. (1994) L^p-approach to steady flows of viscous compressible fluids in exterior domains. *Arch. Rat. Mech. Anal.* **126**, 243–297.

Odgen, R.W. (1972) Large deformation isotropic elasticity: On the correlation of theory and experiment for incompressible rubberlike solids. *Proc. Royal Soc. London* **A 326**, 565–584.

Ornstein, D. (1962) A non-inequality for differential operators in the L^1 norm. *Arch. Rat. Mech. Anal.* **11**, 40–49.

Otto, F. (1992) First order equations with boundary conditions. Preprint no. 234, SFB 256, Univ. Bonn.

Otto, F. (1993) Ein Randwertproblem für skalare Erhaltungssätze. PhD Thesis, Universität Bonn (in German).

Padula, M. (1986) Existence of global solutions for two-dimensional viscous compressible flows. *J. Funct. Anal.* **69**, 1–20.

Padula, M. (1988) Erratum to J. Funct. Anal. 69(1986), 1–20. *J. Funct. Anal.* **76**, 231.

Padula, M. (1994) Mathematical properties of motions of viscous compressible fluids. In: *Progress in Theoretical and Computational Fluid Mechanics*, Galdi, G.P., Málek, J. and Nečas, J. (eds), Pitman Research Notes in Mathematics Series 308, Longman Scientific & Technical, Essex, 128–173.

Parés, C. (1992) Existence, uniqueness and regularity of solution of the equations of a turbulence model for incompressible fluids. *Applicable Analysis* **43**, 245–296.

Pippard, A.B. (1957) *Elements of Classical Thermodynamics.* Cambridge University Press, Cambridge.

Pokorný, M. (1996) Cauchy problem for the incompressible viscous non-Newtonian fluids (to appear in *Aplikace matematiky*).

Protter, M.H. and Weinberger, H.F. (1967) *Maximum Principles in Differential Equations*, Prentice–Hall, Englewood Cliffs, New Jersey.

Rajagopal, K.R. (1993) Mechanics of non-Newtonian fluids. In: *Recent Developments in Theoretical Fluid Mechanics*, Galdi, G.P. and Nečas, J. (eds), Pitman Research Notes in Mathematics, Series 291, Longman Scientific & Technical, Essex, 129–162.

Rannacher, R. (1988) Numerical analysis of nonstationary fluid flow (A survey). Technical Report 492, SFB 123, Univ. Heidelberg.

Rao, M. M. and Ren, Z. D. (1991) *Theory of Orlicz Spaces.* Marcel Dekker Inc., New York.

Rauch, J. (1986) BV estimates fail for most quasilinear hyperbolic systems in dimension greater than one. *Comm. Math. Phys.* **106**, 481–484.

Rokyta, M. (1992) Euler equations and their numerical solution by the finite volume method. PhD Thesis, Faculty of Mathematics and Physics, Charles University, Prague.

Roubíček, T. (1990) A generalization of the Lions-Temam compact imbedding theorem. *Časopis pěst. mat.* **115**, 338–342.

Roubíček, T. (1996) *Relaxation in Optimization Theory and Variational Calculus.* (A monograph to appear under W. de Gruyter, Berlin, N.Y.)

Roubíček, T., Hoffmann, K.-H. (1995) About the concept of measure-valued solutions to distributed parameter systems. *Math. Meth. in Appl. Sci.* **18**, 671–685.

Rubart, L. and Böhme, G. (1991) Numerical simulation of shear-thinning flow problems in mixing vessels. *Theoret. Comput. Fluid Dynamics* **3**, 95–115.

Rudin, W. (1974) *Real and Complex Analysis.* McGraw-Hill, Inc., New York.

Schochet, S. (1989) Examples of measure-valued solutions. *Comm. P.D.E.* **14**(5), 545–575.

Schowalter, W.R. (1978) *Mechanics of Non-Newtonian Fluids.* Pergamon Press, Oxford.

Segal, I. (1962) Nonlinear semigroups. *Ann. of Math.* **78**, 334–362.

Serre, D. (1986) La compacité par compensation pour les systèmes hyperboliques non linéares de deux équations a une dimension d'espace. *J. Math. Pures et Appl.* **65**, 423–468 (in French).

Serre, D. (1994) Systemes hyperboliques riches de lois de conservation. In: *Nonlinear partial differential equations and their applications.* College de France Seminar, Vol. XI (Paris, 1989–1991), Pitman Res. Notes Math., Harlow, 248–281 (in French).

Sever, M. (1989) Uniqueness failure for entropy solutions of hyperbolic systems of conservation laws. *Comm. Pure Appl. Math.* **42**, 173–183.

Simader, C.G. (1972) *On Dirichlet's Boundary Value Problem.* Lecture Notes in Math. 268, Springer–Verlag, Berlin–Heidelberg–New York.

Simon, J. (1987) Compact sets in the space $L^p(0,T;B)$. *Annali di Mat. Pura ed Applic.* **146**, 65–96.

Slemrod, M. (1991) Dynamics of measure-valued solutions to a backward-forward heat equation. *J. Dynamics Differential Equations*, **3**, 1–28.

Smoller, J. (1983) *Shock Waves and Reaction-Diffusion Equations.* Grundlehren der math. Wissenschaften, Bd. 258, 1st ed. (2nd ed. 1994), Springer–Verlag, Berlin–Heidelberg–New York.

Solonnikov, V.A. (1977) Estimates for solution of nonstationary Navier-Stokes equiations. *J. Soviet Math.* **8**, 467–523.

Sommerfeld, A. (1964) *Mechanics of Deformable Bodies.* Academic Press, New York, 2nd ed.

Spencer, A.J.M. (1971) *Theory of Invariants.* Academic Press, New York.

Stein, E.M. (1970) *Singular Integrals and Differentiability Properties of Functions.* Princeton University Press, Princeton.

Szepessy, A. (1989a) Convergence of a shock-capturing streamline diffusion finite element method for a scalar conservation law in 2D. *Math. of Comp.* **53**, no. 188, 527–545.

Szepessy, A. (1989b) Measure-valued solutions of scalar conservation laws with boundary conditions. *Arch. Rat. Mech. Anal.* **107**, no. 2, 181–193.

Tartar, L. (1979) Compensated compactness and applications to partial differential equations. In: *Non-linear Analysis and Mech.*, Heriot-Watt Symp. Vol. IV, Knops, R.J. (ed.), Research Notes in Math. 39, Pitman, Boston–London–Melbourne, 136–192.

Tartar, L. (1983) The compensated compactness method applied to systems of conservation laws. In: *Systems of Nonlinear PDE*, Ball, J.M. (ed.), NATO ASI Series D. Reidel Publ. Comp., 263–285.

Tartar, L. (1990) H-measures, a new approach for studying homogenization, oscillations and concentration effects in partial differential equations. *Proc. Royal Soc. Edinb.* **115 A**, 193–230.

Tartar, L. (1992) On mathematical tools for studying partial differential equations of continuum physics: H-measures and Young measures. In: *Developments in Partial Differential Equations and Applications to Mathematical Physics* (Ferrara, 1991), Butazzo, G., Galdi, G.P. and Zanghirati, L. (eds), Plenum Press, New York, 201–217.

Temam, R. (1977) *Navier-Stokes Equations: Theory and Numerical Analysis.* North Holland, Amsterdam–New York.

Temam, R. (1985) *Mathematical Problems in Plasticity.* Gauthier Villars, Paris.

Temam, R. (1988) *Infinite-dimensional Dynamical Systems in Mechanics and Physics.* Springer–Verlag, Berlin–Heidelberg–New York.

Tobiska, L. and Schieweck, F. (1991) A nonconforming finite element method of upstream type applied to the stationary Navier-Stokes equation. *R.A.I.R.O. Math. Mod. and Num. Anal.* **23**, 627–647.

Triebel, H. (1978) *Interpolation Theory, Function Spaces, Differential Operators*, North–Holland, Amsterdam–New York–Oxford–Tokyo.

Triebel, H. (1983/1992) *Theory of Function Spaces (II).* Birkhäuser Verlag and Akad. Verlagsges, Geest & Portig, Basel–Boston–Stuttgart and Leipzig.

Trudinger, N.S. (1967) On imbeddings into Orlicz spaces and some applications. *J. Mat. Mech.* **17**, 473–483.

Truesdell, C. (1991) *A first Course in Rational Continuum Mechanics, Volume 1: General Concepts* (2nd edition). Academic Press, San Diego–London.

Truesdell, C. and Noll, W. (1965) *The Non-Linear Field Theories of Mechanics.* Handbuch der Physik III/3, Springer–Verlag, Berlin–Heidelberg–New York.

Truesdell, C. and Toupin, R.A. (1960) *Prinzipien der Klassischen Mechanik und Feldtheorie.* Collected in: *The Classical Field Theories.* Handbuch der Physik III/1, Springer–Verlag, Berlin–Heidelberg–New York.

Van der Veen, C.J. and Whillans, I.M. (1990) Flow laws for glacier ice: comparison of numerical predictions and field measurements. *J. Glaciology* **36**, 324–339.

Vecchi, I. (1989) Entropy compactification for nonlinear hyperbolic problems, PhD Thesis, Ruprecht-Karls-Universität, Heidelberg.

Vecchi, I. (1990) A note on entropy compactification for scalar conservation laws. *Nonlinear Analysis, Theory, Methods & Applications* **15**, no. 7, 693–695.

Vecchi, I. (1991) Entropy compactification in Lagrangean gas dynamics. *Math. Methods Appl. Sci.* **14**, no. 3, 207–216.

Von Wahl, W. (1985) *The Equations of Navier-Stokes and Abstract Parabolic Equations.* Friedr. Vieweg & Sohn, Braunschweig/Wiesbaden.

Wada, J., Kubota, H., Ishiguro, T. and Ogawa, S. (1988) A fully implicit high-resolution scheme for chemically reacting compressible flows. In: *Nonlinear Hyperb. Eq.—Theory, Comp. Meth. and Appl.*, Ballman, J. and Jeltsch, R. (eds), Proceedings of the Second Int. Confer. on Nonlin. Hyperb. Problems, Aachen, FRG, 648–659.

Walter, W. (1970) *Differential and Integral Inequalities.* Springer–Verlag, Berlin–Heidelberg–New York.

Wloka, J. (1987) *Partial Differential Equations.* Cambridge University Press, Cambridge–New York.

Yeleswarapu, K.K., Antaki, J.F., Kameneva, M.V., Rajagopal, K.R. (1994) A generalized Oldroyd-B model as constitutive equation for blood. *Ann. Biomed. Engineering* **22**, Supplement 1, p. 16.

Yosida, K. (1965) *Functional Analysis.* Springer–Verlag, Berlin–Göttingen–Heidelberg.

Young, L.C. (1937) Generalized curves and the existence of an attained absolute minimum in the calculus of variations. *Comptes Rendus de la Société et des Lettres de Varsovie*, Classe III, **30**, 212–234.

Young, L.C. (1938) Necessary conditions in the calculus of variations. *Acta Math.* **69**, 239–258.

Young, L.C. (1942) Generalized surfaces in the calculus of variations. *Acta Math.* **43**, 84–103 (part I), 530–544 (part II).

Zachmanoglou, E.C. and Thoe, D.W. (1986) *Introduction to Partial Differential Equations with Applications.* Dover, New York.

Zeidler, E. (1986) *Nonlinear Functional Analysis I—Fixed Points Theorems.* Springer–Verlag, Berlin–Heidelberg–New York.

Zeidler, E. (1988) *Nonlinear Functional Analysis IV—Applications to Mathematical Physics.* Springer–Verlag, Berlin–Heidelberg–New York.

Zeidler, E. (1990a) *Nonlinear Functional Analysis II/A—Linear Monotone Operators.* Springer–Verlag, Berlin–Heidelberg–New York.

Zeidler, E. (1990b) *Nonlinear Functional Analysis II/B—Nonlinear Monotone Operators.* Springer–Verlag, Berlin–Heidelberg–New York.

Author index

Subject index

Page numbers appearing in *italic* refer to figures.