Bibliography

- [AIZ 02] AIZINGER V., DAWSON C., "A discontinuous Galerkin method for two-dimensional flow and transport in shallow water", *Advances in Water Resources*, 25, pp. 67–84, 2002.
- [AIZ 03] AIZINGER V., DAWSON C., Erratum to "A discontinuous Galerkin method for twodimensional flow and transport in shallow water", *Advances in Water Resources*, 26, pp. 349, 2003.
- [ALC 01] ALCRUDO F., BENKHALDOUN F., "Exact solutions to the Riemann problem with a bottom step", *Computers and Fluids*, 30, pp. 643–671, 2001.
- [ALC 92] ALCRUDO F., GARCIA-NAVARRO P., SAVIRON J.M., "Flux difference splitting for the 1D open channel flow equations", *International Journal for Numerical Methods in Fluids*, 14, pp. 1009–1018, 1992.
- [ALL 03] ALLIEVI L., Teoria generale des moto perturbato dell'acqua nei turbi in pressione. Am. Soc. Ing. Arch. Italiana, 1903. Translated to French by Allievi (1904). Translated into English by E.E. Halmos (1904): The Theory of Water Hammer, ASME, NY.
- [AUD 05] AUDUSSE E., BRISTEAU M.O., "A well-balanced positivity preserving "secondorder" scheme for shallow water flows on unstructured meshes", *Journal of Computational Physics*, 206, pp. 311–333, 2005.
- [BAR 02] BARDOS C., PIRONNEAU O., "A formalism for the differentiation of conservation laws", *Comptes Rendus de l'Académie des Sciences Paris*, Ser. I 335, pp. 836–845, 2002.
- [BER 94] BERMÚDEZ A., VÁZQUEZ M.E., "Upwind methods for hyperbolic conservation laws with source terms", *Computers and Fluids*, 23, pp. 1049–1071, 1994.
- [BER 98] BERMÚDEZ A., DERVIEUX A., DESIDERI J.A., VÁZQUEZ M.E., "Upwind schemes for the two-dimensional shallow water equations with variable depth using unstructured meshes", *Computational Methods in Applied Mechanical Engineering*, 155, pp. 49–72, 1998.
- [BRU 02] BRUFAU P., VÁZQUEZ-CENDÓN M.E., GARCÍA-NAVARRO P., "A numerical method for the flooding and drying of irregular domains", *International Journal for Numerical Methods in Fluids*, 39, pp. 247–275, 2002.

- 528 Wave Propagation in Fluids
- [BUC 42] BUCKLEY S.E., LEVERETT M.C., "Mechanisms of fluid displacement in sands", *Transactions AIME*, 146, 107-116, 1942.
- [BUR 01] BURGUETE J., GARCÍA-NAVARRO P., "Efficient construction of high-resolution TVD conservative schemes for equations with source terms: application to shallow water flows", *International Journal for Numerical Methods in Fluids*, 37, pp. 209–248, 2001.
- [BUR 04] BURGUETE J., GARCÍA-NAVARRO P., "Improving simple explicit methods for unsteady open channel and river flow", *International Journal for Numerical Methods in Fluids*, 45, pp. 125–156, 2004.
- [BUR 48] BURGERS J.M. "A mathematical model illustrating the theory of turbulence", *Advances in Applied Mechanics*, 1, pp. 171-199, 1948.
- [CAC 03] CACUCI D.G., Sensitivity and Uncertainty Analysis. I. Theory, Chapman & Hall/crc, 2003.
- [CAR 72] CARLIER M., Hydraulique Générale et Appliqué, Eyrolles, 1972.
- [CHA 03] CHACÓN REBOLLO T., DOMÍNGUEZ DELGADO A., FERNÁNDEZ NIETO E.D., "A family of stable numerical solvers for the shallow water equations with source terms", *Computer Methods in Applied Mechanincal Engineering*, 192, pp. 203–225, 2003.
- [CHO 73] CHOW V.T., Open-Channel Hydraulics, McGraw-Hill International Editions, Civil Engineering Series, 1973.
- [COC 01] COCKBURN B., SHU C.W., "Runge-Kutta discontinuous Galerkin methods for convection-dominated problems", *Journal of Scientific Computing*, 16, pp. 173–261, 2001.
- [COC 89a] COCKBURN B., LIN S.Y., SHU C.W., "TVB Runge-Kutta local projection discontinuous Galerkin finite element method for conservation laws III: One-dimensional systems", *Journal of Computational Physics*, 84, pp. 90–113, 1989.
- [COC 89b] COCKBURN B., SHU C.W., "TVB Runge-Kutta local projection discontinuous Galerkin finite element method for scalar conservation laws II: General framework", *Mathematics of Computation*, 52, pp. 411–435, 1989.
- [COC 90] COCKBURN B., HOU S., SHU C.W., "TVB Runge-Kutta local projection discontinuous Galerkin finite element method for conservation laws IV: The multidimensional case", *Math. Comp.*, 54, pp. 545–581, 1990.
- [COC 98] COCKBURN B., SHU C.W., "The Runge-Kutta discontinuous Galerkin method for conservation laws V: Multidimensional systems", *Journal of Computational Physics*, 141, pp. 199–224, 1998.
- [COL 51] COLE J.D., "On a quasilinear equation occurring in aerodynamics", *Quarterly Applied Mathematics*, 9, pp. 225-236, 1951.
- [COL 82] COLELLA P., "Glimm's method for gas dynamics", SIAM Journal of Scientific and Statistical Computing, 3, pp. 76–110, 1982.

- [COL 84] COLELLA P., WOODWARD P.R., "The Piecewise Parabolic Method (PPM) for gasdynamical simulations", *Journal of Computational Physics*, 54, pp. 174-201, 1984.
- [COU 48] COURANT R., FRIEDRICHS K.O., Supersonic Flow and Shock Waves, Interscience, NY, London, 1948.
- [COU 52] COURANT R., ISAACSON E., REES M., "On the solution of nonlinear hyperbolic differential equations by finite differences", *Communications on Pure and Applied Mathematics*, 5, pp. 243-255, 1952.
- [CUN 80] CUNGE J.A., HOLLY F.M. JR, VERWEY A., Practical Aspects of Computational River Hydraulics, Pitman Publ., reprinted by Iowa University Press, 1980.
- [DAU 67] DAUBERT A., GRAFFE O., "Quelques aspects des écoulements presque horizontaux à deux dimensions en plan et non permanents", *La Houille Blanche*, 8, pp. 847-860, 1967.
- [DAV 88] DAVIS S.F., "Simplified second-order Godunov-type methods", SIAM Journal of Statistical Science and Computing, 9, pp. 445-473, 1988.
- [DAW 02] DAWSON C., PROFT J., "Discontinuous and coupled continuous/discontinuous Galerkin methods for the shallow water equations", *Computer Methods in Applied Mechanics and Engineering*, 191, pp. 4721–4746, 2002.
- [DEL 08] DELENNE C., GUINOT V., CAPPELAERE B., "Direct sensitivity computation for the Saint-Venant equations with hydraulic jumps", *Comptes Rendus Mécanique* 336, pp. 766– 771, 2008.
- [DHI 05] DHI, Mike 11 reference manual. DHI Water and environment, Hørsholm, 2005.
- [DIC 85] DICK E., "A multigrid method for the Cauchy-Riemann equations based on fluxdifference splitting and its extension to the steady Euler equations", *Journal of Computational and Applied Mathematics*, 12&13, pp. 247–263, 1985.
- [DUK 85] DUKOWICZ J., "A general, non-iterative Riemann solver for Godunov's method", Journal of Computational Physics, 61, pp. 119–137, 1985.
- [EIN 88] EINFELDT B., "On Godunov-type methods for gas dynamics", SIAM Journal of Numerical Analysis, 25(2), pp. 294–318, 1988.
- [ELI 07] ELIZONDO D., CAPPELAERE B., FAURE C., "Automatic versus manual model differentiation to compute sensitivities and solve non-linear inverse problems", *Computers and Geosciences*, 28, pp. 309–326, 2002.
- [FIN 10] FINAUD-GUYOT P., DELENNE C., LHOMME J., GUINOT V., LLOVEL C., "An approximate-state Riemann solver for the two-dimensional shallow water equations with porosity", *International Journal for Numerical Methods in Fluids*, 2010.
- [FRO 68] FROMM J.E., "A method for reducing dispersion in convective difference schemes", Journal of Computational Physics, 3, pp. 176-189, 1968.
- [GAL 03] GALLOUËT T., HÉRARD J.M., SEGUIN N., "Some approximate Godunov schemes to compute shalllow-water equations with topography", *Computers and Fluids*, 32, pp. 479– 513, 2003.

- 530 Wave Propagation in Fluids
- [GAR 00] GARCIA-NAVARRO P., VAZQUEZ-CENDON M.E., "On numerical treatment of the source term in the shallow water equations", *Computers and Fluids*, 29, pp. 951–979, 2000.
- [GER 82] GERRITSEN H., Accurate boundary treatment in shallow water flow computations, PhD thesis, University of Twente, The Netherlands, 1982.
- [GHO 09] GHOSTINE R., KESSERWANI G., MOSÉ R., VAZQUEZ J., GHENAIM A., "An improvement of classical slope limiters for high-order discontinuous Galerkin method", *International Journal for Numerical Methods in Fluids*, 59, pp. 423–442, 2009.
- [GOD 59] GODUNOV S.K., "A difference method for calculation of discontinuous solutions of hydrodynamics", *Matematichestki Sbornik*, 1959.
- [GOD 99] GODUNOV S.K., "Reminiscences about difference schemes", Journal of Computational Physics, 153, pp. 6-25, 1999.
- [GOU 77] GOURLAY S., "Splitting methods for time dependent partial differential equations", The state of the art in numerical analysis, Proceedings of the conference: The State of the art in Numerical Analysis, (ed.) D.A.H. JACOBS, New York University, 12-15 April 1976, Academic Press, 1977.
- [GRE 96] GREENBERG J.M., LEROUX A.Y., "A well-balanced scheme for the numerical processing of source terms in hyperbolic equations", *SIAM Journal on Numerical Analysis*, 33, pp. 1–16, 1996.
- [GUI 00] GUINOT V., "Riemann solvers for water hammer simulations by Godunov method", International Journal for Numerical Methods in Engineering, 49, pp. 851–870, 2000.
- [GUI 01a] GUINOT V., "Numerical simulation of two-phase flow in pipes using Godunov method", *International Journal for Numerical Methods in Engineering*, 50, pp. 1169–1189, 2001.
- [GUI 01b] GUINOT V., "The discontinuous profile method for simulating two-phase flow in pipes using the single component approximation", *International Journal for Numerical Methods in Fluids*, 37, pp. 341–359, 2001.
- [GUI 03a] GUINOT V., Godunov-type Schemes, An Introduction for Engineers, Elsevier, 2003.
- [GUI 03b] GUINOT V., "Riemann solvers and boundary conditions for two-dimensional shallow water simulations", *International Journal for Numerical Methods in Fluids*, 41, pp. 1191-1219, 2003.
- [GUI 06] GUINOT V., SOARES-FRAZÃO S., "Flux and source term discretization for twodimensional shallow water equations with porosity on unstructured grids", *International Journal for Numerical Methods in Fluids*, 50, pp. 309–345, 2006.
- [GUI 07] GUINOT V., LEMÉNAGER M., CAPPELAERE B., "Sensitivity equations for hyperbolic conservation law-based flow models", *Advances in Water Resources*, 30, pp. 1943–1961, 2007.

- [GUI 09a] GUINOT V., "Upwind finite volume solution of sensitivity equations for hyperbolic systems of conservation laws with discontinuous solutions", *Computers and Fluids*, 38, pp. 1697–1709, 2009.
- [GUI 09b] GUINOT V., CAPPELAERE B., DELENNE C., "Finite-volume solution of onedimensional shallow-water sensitivity equations", *Journal of Hydraulic Research*, 47, pp. 811–819, 2009.
- [GUI 09c] GUINOT V., DELENNE C., CAPPELAERE B., "An approximate Riemann solver for sensitivity equations with discontinuous solutions", *Advances in Water Resources*, 32, pp. 61-77, 2009.
- [GUN 99] GUNZBURGER M.D., "Sensitivities, adjoint and flow optimization", *International Journal for Numerical Methods in Fluids*, 31, pp. 53-78, 1999.
- [HAL 82] HALL M.C.G., CACUCI D.G., SCHLESINGER M.E., "Sensitivity analysis of a radiative-convective model by the adjoint method", *Journal of Atmospheric Sciences*, 39, pp. 2038–2050, 1982.
- [HAL 83] HALL M.C.G., CACUCI D.G., "Physical interpretation of adjoint functions for sensitivity analysis of atmospheric models", *Journal of Atmospheric Sciences*, 40, pp. 2537–2546, 1983.
- [HAR 83a] HARTEN A., "High resolution schemes for hyperbolic conservation laws", *Journal* of Computational Physics, 49, pp. 357-393, 1983.
- [HAR 83b] HARTEN A., LAX P.D., VAN LEER B., "On upstream differencing and Godunovtype schemes for hyperbolic conservation laws", *Journal of Computational Physics*, 50, pp. 235-269, 1983.
- [HAR 84] HARTEN A., "On a class of high resolution total-variation-stable finite-difference schemes", *SIAM Journal of Numerical Analysis*, 21, pp. 1-23, 1984 (with Appendix by P.D. Lax).
- [HER 07] HERVOUËT J.M., Hydrodynamics of Free Surface Flows: Modelling with the Finite Element Method, Wiley, 2007.
- [HOL 77] HOLLY F.M. JR, PREISSMANN A., "Accurate calculation of transport in two dimensions", Journal of the Hydraulics Division, ASCE, 103, pp. 1259–1277, 1977.
- [HOP 50] HOPF E., Communications in Pure and Applied Mathematics, 3, 201, 1950.
- [HUB 00] HUBBARD M.E., GARCIA-NAVARRO P., "Flux difference splitting and the balancing of source terms and flux gradients", *Journal of Computational Physics*, 165, pp. 89–125, 2000.
- [JAE 33] JAEGER C., Théorie Générale du Coup de Bélier, Dunod, Paris, 1933.
- [JAE 77] JAEGER C., Fluid Transients in Hydro-Electric Engineering Practice, Blackie and Sons, Glasgow London, 1977.

- 532 Wave Propagation in Fluids
- [JIN 00] JIN M., FREAD D.L., "Discussion on the application of relaxation scheme to wavepropagation simulation in open channel networks", *Journal of Hydraulic Engineering*, 126, pp. 89–91, 2000.
- [JOH 02] JOHNSON T.C., BAINES M.J., SWEBY P.K., "A box scheme for transcritical flow", International Journal for Numerical Methods in Engineering, 55, pp. 895–912, 2002.
- [JOU 98] JOUKOWSKI N., "Water hammer", English translation O. Simin (1904), Proc. American Waterworks Association, 341, 1898.
- [KAT 77] KATOPODES N.K., Unsteady two-dimensional flow through a breached dam by the method of characteristics, PhD thesis, University of California, USA, 1977.
- [KAT 79] KATOPODES N., STRELKOFF T., "Two-dimensional shallow water-wave models", Journal of the Engineering Mechanics Division (ASCE)105, pp. 317-334, 1979.
- [KES 09] KESSERWANI G., MOSÉ R., VAZQUEZ J., GHENAIM A., "A practical implementation of high-order RKDG models for the 1D open-channel flow equations", *International Journal for Numerical Methods in Fluids*, 29, pp. 1389–1409, 2009.
- [KES 10] KESSERWANI G., LIANG Q., VAZQUEZ J., MOSÉ R., "Well-balancing issues related to the RKDG2 scheme for the shallow water equations", *International Journal for Numerical Methods in Fluids*, 62, pp. 428–448, 2010.
- [KRI 07] KRIVODONOVA L., "Limiters for high-order discontinuous Galerkin methods", Journal of Computational Physics, 226, pp. 276-296, 2007.
- [KUB 06] KUBATKO E.J., WESTERINK J.J., DAWSON C., "An unstructured grid morphodynamic model with a discontinuous Galerkin method for bed evolution", *Ocean Modelling*, 15, pp. 71–89, 2006.
- [LAX 54] LAX P.D., "Weak solutions of nonlinear hyperbolic equations and their computation", *Communications on Pure and Applied Mathematics*, 7(1), pp. 159–193, 1954.
- [LAX 57] LAX P.D., "Hyperbolic systems of conservation laws II", Communications on Pure and Applied Mathematics, 10, pp. 537–566, 1957.
- [LAX 60] LAX P.D., WENDROFF B., "Systems of conservation laws", Communications on Pure and Applied Mathematics, 13, pp. 217–237, 1960.
- [LED 86] LE DIMET F.X., TALGRAND O., "Variational algorithms for analysis and assimilation of meteorological observations: Theoretical aspects", *Tellus*, 38A, pp. 97–110, 1986.
- [LEE 10] LEE S.H., WRIGHT N.G., "Simple and efficient solution of the shallow water equations with source terms", *International Journal for Numerical Methods in Fluids*, 63, pp. 313-340, 2010.
- [LEN 96] LENCASTRE A., Hydraulique Générale, Eyrolles, 1996.
- [LEV 02] LEVEQUE R.J., Finite Volume Methods for Hyperbolic Problems, Cambridge University Press, 2002.

- [LEV 98] LEVEQUE R.J., "Balancing source terms and flux gradients in high-resolution Godunov methods: the quasi-steady wave propagation algorithm", *Journal of Computational Physics*, 146, pp. 346–365, 1998.
- [LHO 07] LHOMME J., GUINOT V., "A general approximate-state solver for hyperbolic systems of conservation laws with source terms", *International Journal for Numerical Methods in Fluids*, 53, pp. 1509–1540, 2007.
- [LIA 09] LIANG Q., MARCHE F., "Numerical resolution of well-balanced shallow water equations with complex source terms", *Advances in Water Resources*, 32, pp. 873–884, 2009.
- [LIG 55] LIGHTHILL M.J., WHITHAM G.B., "On kinematic waves. I. Flood movement in long rivers", *Proceedings of the Royal Society*, A 229, pp. 281-316, 1955.
- [LIU 75] LIU T.P., "The Riemann problem for general systems of conservation laws", *Journal of Differential Equations*, 18, pp. 218–234, 1975.
- [LIU 76] LIU T.P., "The entropy condition and the admissibility of shocks", Journal of Mathematical Analysis and Applications, 53, pp. 78–88, 1976.
- [LU 07] LU S., SAGAUT P., "Direct sensitivity analysis for smooth unsteady compressible flow using complex differentiation", *International Journal for Numerical Methods in Fluids*, 53, pp. 1863–1886, 2007.
- [LYN 67] LYNESS, J.N., MOLER C.B., "Numerical differentiation of analytic functions", SIAM Journal of Numerical Analysis, 4, pp. 202–201, 1967.
- [MAR 95] MARCHUK G.I., Adjoint Equations and Analysis of Complex Systems, Kluwer Academic, Boston, 1995.
- [MES 97] MESELHE E., HOLLY F.M. JR., "Invalidity of the Preissmann scheme for transcritical flow", *Journal of Hydraulic Engineering*, ASCE, 123, pp. 605-614, 1997.
- [NOV 10] NOVAK P., GUINOT V., JEFFREY A., REEVE D., Hydraulic Modeling. Principles, Methods, Applications, Spon Press, Abingdon, New York, 2010.
- [NUJ 95] NUJIC M., "Efficient implementation of non-oscillatory schemes for the computation of free-surface flows", *Journal of Hydraulic Research*, 33, pp. 101–111, 1995.
- [PAN 89] PANCHANG V.G., O'BRIEN J.J., "On the determination of hydraulic model parameters using the adjoint state formulation", *Modeling Marine Systems*, Boca Raton (Ed. A.M. Davies), pp. 6–18, 1989.
- [PRE 61a] PREISSMANN A., "Propagation des intumescences dans les canaux et rivières", Premier Congrès de l'Association Française du Calcul, Grenoble, September 1961.
- [PRE 61b] PREISSMANN A., CUNGE J.A., "Calcul des intumescences sur machines électroniques", Proceedings of the 9th IAHRE Conference, Dubrovnik, 1961.
- [PRE 61c] PREISSMANN A., CUNGE J.A., "Calcul du mascaret sur machine électronique", La Houille Blanche, 5, pp. 588–596, 1961.

- 534 Wave Propagation in Fluids
- [ROE 81] ROE P.L., "Approximate Riemann solvers, parameter vectors and difference schemes", Journal of Computational Physics, 43, pp. 357–372, 1981.
- [SAN 00] SANDERS B.F., KATOPODES N.D., "Adjoint sensitivity analysis for shallow-water wave control", *Journal of Engineering Mechanics*, 126, pp. 909–919, 2000.
- [SAN 99] SANDERS B.F., KATOPODES N.D., "Control of canal flow by adjoint sensitivity method", *Journal of Irrigation and Drainage Engineering*, 125, pp. 287–297, 1999.
- [SAU 66] SAUERWEIN H., "The method of characteristics for three-dimensional unsteady magnetofluid dynamics of a multi-component medium", *Journal of Fluid Mechanics*, 25, pp. 17–41, 1966.
- [SAU 67] SAUERWEIN H., "Numerical calculations of multidimensional and unsteady flows by the method of characteristics", *Journal of Computational Physics*, 150, pp. 425–467, 1967.
- [SAV 93] SAVIC L., HOLLY F.M. JR., "Dambreak flood waves computed by modified Godunov method", *Journal of Hydraulic Research*, 31, pp. 187–204, 1993.
- [SOA 07] SOARES-FRAZÃO S., GUINOT V., "An eigenvector-based linear reconstruction scheme for the shallow water equations on two-dimensional unstructured meshes", *International Journal for Numerical Methods in Fluids*, 53, pp. 23–55, 2007.
- [STE 81] STEGER J.L., WARMING R.F., "Flux-vector splitting of the inviscid gasdynamic equations with application to finite-difference methods", *Journal of Computational Physics*, 40, pp. 263–293, 1981.
- [STO 57] STOKER J.J., Water Waves, Interscience Publishers Inc., New York, 1957.
- [STR 68] STRANG G., "On the construction and comparison of difference schemes", SIAM Journal of Numerical Analysis, 5 (3), pp. 506-517, 1968.
- [SWE 84] SWEBY P.K., "High resolution schemes using flux limiters for hyperbolic conservation laws", SIAM Journal of Numerical Analysis, 21, pp. 995-1011, 1984.
- [TOR 07] TORO E.F., GARCÍA-NAVARRO P., "Godunov-type methods for free-surface shallow flows: A review", *Journal of Hydraulic Research*, 45, pp. 736–751, 2007.
- [TOR 94] TORO E.F., SPRUCE M., SPEARES W., "Restoration of the contact surface in the HLL-Riemann solver", Shock Waves, 4, pp. 25-34, 1994.
- [TOR 97] TORO E.F., *Riemann Solvers and Numerical Methods for Fluid Dynamics*, Springer, Berlin Heidelberg, New York, 1997.
- [VAN 77] VAN LEER B., "Toward the ultimate conservative difference scheme. IV. A new numerical approach to convection", *Journal of Computational Physics*. 23, pp. 276-299, 1977.
- [VAN 79] VAN LEER B., "Toward the ultimate conservative difference scheme. V. A secondorder sequel to Godunov's scheme", *Journal of Computational Physics*. 32, pp. 101-136, 1979.

- [VAZ 99] VÁZQUEZ-CENDÓN M.E., "Improved treatment of source terms in upwind schemes for the shallow water equations in channels with irregular geometry", *Journal of Computational Physics*, 148, pp. 497–526, 1999.
- [VIC 82] VICHNEVETSKY R., BOWLES J.B., Fourier Analysis of Numerical Approximations of Hyperbolic Equations, SIAM, Philadelphia, 1982.
- [WAR 76] WARMING R., BEAM R., "Upwind second-order difference schemes and applications in aerodynamics flows", *AIAA Journal*, 14, pp. 1241-1249, 1976.
- [WYL 77] WYLIE E.B., STREETER V.L. Fluid Transients, McGraw-Hill, New York, 1977.
- [ZHO 01] ZHOU J.G., CAUSON D.M., MINGHAM C.G., INGRAM D.M., "The surface gradient method for the treatment of source terms in the shallow water equations", *Journal of Computational Physics*, 168, pp. 1–25, 2001.