

Liu, Tai-Ping

Bibliography

- (with Chang, C.-H.) Shock profiles of Navier-Stokes equations for compressible medium, *J. Hyperbolic Differ. Equ.* 20, no. 2, 499-515, 2023
- Partial dissipation and sub-shock. *Quart. Appl. Math.* 81, no. 3, 483-506, 2023
- (with Cheng, C.-H.; Yu, S.-H.) Green's function of heat equation for heterogeneous media in 3-D, *Comm. Partial Differential Equations* 47, no. 11, 2180-2216, 2022
- (with Yu, S.-H.) Navier-Stokes equations in gas dynamics: Green's function, singularity, and well-posedness, *Comm. Pure Appl. Math.* 75, no. 2, 223-348, 2022
- Shock waves in Euler equations for compressible medium, *J. Hyperbolic Differ. Equ.* 18, no. 3, 761-787, 2021
- Shock Waves, *Grad. Stud. Math.*, 215 American Mathematical Society, Providence, RI, xvii+437 pp, 2021
- N -waves for conservation laws with linear degeneracy *Bull. Inst. Math. Acad. Sin. (N.S.)* 15, no. 3, 187-216, 2020
- On the well-posedness of weak solutions, *Ann. Appl. Math.* 35, no. 3, 309-316, 2019
- (with Jiang, J.-C.) Boltzmann collision operator for the infinite range potential: a limit problem, *Ann. Inst. H. Poincaré C Anal. Non Linéaire* 36, no. 6, 1639-1677, 2019
- (with Yu, S.-H.) Multi-dimensional wave propagation over a Burgers shock profile, *Archive for Rational Mechanics and Analysis*, 229 (1), 231-337, 2018
- Hopf-Cole transformation, *Bull. Inst. Math. Acad. Sin. (N.S.)*, 12 (1), 71-101, 2017
- (with Chen, I.-K.; Funagane, H.; Takata, S.) Singularity of the velocity distribution function in molecular velocity space, *Comm. Math. Phys.*, 341 (1), 105-134, 2016
-
- (with Noh, S. E.) Wave propagation for the compressible Navier-Stokes equations, *J. Hyperbolic Differ. Equ.* , 12 (2), 385-445, 2015
- (with Zeng, Y.) Shock waves in conservation laws with physical viscosity, *Mem. Amer. Math. Soc.*, 234 (1105), 2015
- (with Yu, S.-H.) Boundary wave propagator for compressible Navier-Stokes equations, *Found. Comput. Math.*, 14 (6), 1287-1335, 2014
- (with Yu, S.-H.) Fujita equation with boundary effect, *Bull. Inst. Math. Acad. Sin. (N.S.)*, 9 (2), 267-282, 2014
- (with Kuo, H.-W.; Tsai, L.-C.) Equilibrating effects of boundary and collision in rarefied gases, *Comm. Math. Phys.*, 318 (2), 421-480, 2014

- (with Chen, I-K.; Takata, S.) Boundary singularity for thermal transpiration problem of the linearized Boltzmann equation, *Arch. Ration. Mech. Anal.*, 212 (2), 575-595, 2014
- Aspects of dissipation for compressible fluids and kinetic theory, *Philos. Trans. R. Soc. Lond. Ser. A Math. Phys. Eng. Sci.*, 371 (2005), 2013
- (with Yu, S.-H.) Invariant manifolds for steady Boltzmann equation and applications, *Archive Rational Mechanics and Analysis*, 209 (3), 869-997, 2013
- (with Kuo, H.-W.; Tsai, L.-C.) Free molecular flow with boundary effect, *Comm. Math. Phys.*, 318 (2), 375-409, 2013
- (with Yu S.-H.) Dirichlet-Neumann kernel for hyperbolic-dissipative system in half-space, *Bull. Inst. Math. Acad. Sin. (N.S.)*, 7 (4), 477-543, 2012
- Multi-dimensional gas flow: some historical perspectives, *Bull. Inst. Math. Acad. Sin. (N.S.)*, 6 (3), 269-291, 2011
- (with Yu, S.-H.) On boundary relation for some dissipative systems, *Bull. Inst. Math. Acad. Sin. (N.S.)*, 6 (3), 245-267, 2011
- (with Yu, S.-H.) Solving Boltzmann equation, Part I: Green's function, *Bull. Inst. Math. Acad. Sin. (N.S.)*, 6 (1), 115-243, 2011
- (with Yu S.-H.) Viscous rarefaction waves, *Bull. Inst. Math. Acad. Sin. (N.S.)*, 5 (2), 123-179, 2010
- (with Yu, S.-H.; Zeng, Y.) Viscous Conservation Laws, Part I: Scalar Laws, *Bull. Inst. Math., Acad. Sin. (N.S.)*, 5 (3), 233-310, 2010
- (with Kuo, H.-W.; Noh, S. E.) Mixture lemma, *Bull. Inst. Math., Acad. Sin. (N.S.)*, 5 (1), 1-10, 2010
- (with Zeng, Y.) On Green's function for hyperbolic-parabolic systems, *Acta Math. Sci. Ser. B Engl. Ed.*, 29 (6), 1556-1572, 2009
- (with Yu, S.-H.) Boltzmann equation, boundary effects, *Discrete Contin. Dyn. Syst.*, 24 (1), 145-157, 2009
- (with Yu, S.-H.) Viscous shock wave tracing, local conservation laws, and pointwise estimates, *Bull. Inst. Math. Aca. (N.S.)*, 4 (3), 167-210, 2009
- (with Zeng, Y.) Time-asymptotic behavior of wave propagation around a viscous shock profile, *Comm. Math. Phys.*, 290 (1), 23-82, 2009
- (with Yu, S.-H.) Diffusion under gravitational and boundary effects, *Bull. Inst. Math. Acad. Sin. (N.S.)*, 3 (1), 167-210, 2008
- (with Elling, V.) Supersonic flow onto a solid wedge, *Comm. Pure Appl. Math.*, 61 (10), 1347-1448, 2008
- (with Yu, S.-H.) Initial-boundary value problem for one-dimensional wave solutions of the Boltzmann equation, *Comm. Pure Appl. Math.*, 60 (3), 295-356, 2007

- (with Lee, M.-Y.; Yu, S.-H.) Large-time behavior of solutions for the Boltzmann equation with hard potentials, *Comm. Math. Phys.*, 269 (1), 17-37, 2007
- (with Chen, C.-C.; Chen, I.-K.; Sone, Y.) Thermal transpiration for the linearized Boltzmann equation, *Comm. Pure Appl. Math.*, 60 (2), 147-163, 2007
- (with Yu, S.-H.) Green's function of Boltzmann equation, 3-D , *Bull. Inst. Math. Acad. Sin. (N.S.)*, 1 (1), 1-78, 2006
- (with Yang, T.; Yu, S.-H.; Zhao, H.-J.) Nonlinear stability of rarefaction waves for the Boltzmann equation, *Arch. Rational Mech. Anal.*, 181 (2), 333-371, 2006
- (with Elling, V.) The ellipticity principle for self-similar potential flows, *J. Hyperbolic Differ. Equ.*, 2 (4), 909-917, 2005
- (with Lan, C.-Y.; Lin, H.-E.; Yu, S.-H.) Propagation of viscous shock waves away from the boundary, *SIAM J. Math. Anal.*, 36 (2), 580-617, 2004
- (with Chen, C.-C.; Yang, T.) Existence of boundary layer solutions to the Boltzmann equation, *Anal. Appl. (Singap.)*, 2 (4), 337-363, 2004
- (with Yu, S.-H.) The Green's function and large-time behavior of solutions for one-dimensional Boltzmann equation, *Comm. Pure. Appl. Math.*, 57 (12), 1543-1608, 2004
- (with Yang, T.; Yu, S.-H.) Energy method for Boltzmann equation, *Phys. D*, 188, 178-192, 2004
- (with Yu, S.-H.) Boltzmann equation: micro-macro decompositions and positivity of shock profiles, *Comm. Math. Phys.*, 246 (1), 133-179, 2004
- (with Ruggeri, T.) Entropy production and admissibility of shocks, *Acta Math. Appl. Sin. Engl. Ser.*, 19, 1-12, 2003
- (with Deng, Y.; Yang, T.; Yao, T.) Solutions with vacuum for Euler-Poisson equations, *Arch. Rational Mech. Anal.*, 164 (3), 261-285, 2002
- (with Yang, T.) Weak Solutions to General Systems of Hyperbolic Conservation Laws, *Comm. Math. Phys.*, 230 (2), 289-327, 2002
- Shock waves. *Proceedings of the International Congress of Mathematicians, Higher Ed. Press (Beijing)*, 185-188, 2002
- (with Yang, T.; Zheng, Y.) Some nonlinear functionals for scalar conservation laws, *Methods Appl. Anal.*, 8 (4), 609-622, 2001
- "Hyperbolic and Viscous Conservation Laws. *CBMS-NSF Regional Conference Series in Applied Mathematics*, 72. Society for Industrial and Applied Mathematics (SIAM), Philadelphia, PA, 2000.
- (with Yu, S.H.) Hyperbolic conservation laws and dynamic systems, *Discrete Contin. Dynam. Systems*, 6 (1), 143-145, 2000
- (with Lien, W.-C.) Nonlinear stability of a self-similar 3-dimensional gas flow, *Comm. Math. Phys.*, 204 (3), 525-549, 1999

- (with Yu, S.-H.) Nonlinear stability of weak detonation waves for a combustion model, *Comm. Math. Phys.*, 204, 551-586, 1999
- (with Yang, T.) Well-posedness theory for hyperbolic conservation laws, *Comm. Pure Appl. Math.* LII, 1553-1586, 1999
- (with Yu, S.-H.) Continuum shock profiles for discrete conservation laws, II. Stability, *Comm. Pure Appl. Math.* LII (1999), 1047-1073. ", 1999
- (with Yang, T.) A generalized entropy for scalar conservation laws, *Comm. Pure Appl. Math.*, 0, 1427-1442, 1999
- (with Yang, T.) Well-posedness theory for system of hyperbolic conservation laws. Hyperbolic problems: theory, numerics, applications, Vol.II, (Zurich,1998), 681-691, *Internat. Ser. Numer. Math.*, 130, Birkhauser, Basel, 1999.
- (with Bressan, A.; Yang, T.) L1 stability estimates for nxn conservatiob laws, *Archive Rational Mech. Anal.*, 149 (1999), no. 1, 1-22.
- (with Yang, T.) L1 stability of conservation laws with coinciding Hugoniot and characteristic curves, *Indiana Univ. Math. J.*, 48 (1999), no. 1, 237-247.
- (with Matsumura, A.; Nishihara, K.) Behaviours of solutions for the Burgers equation with boundary corresponding to rarefaction waves", *SIAM J. Math. Anal.* 29 (1998), no. 2, 293-308.
- (with Yang, T.) L1 stability of 2x2 systems of hyperbolic conservation laws", *J. Amer. Math. Soc.*, 729-772, 1998
- (with Xin, Z.; Yang, T.) Vacuum states for compressible flow, *Disc. Cont. Dyn. Ana.*, 4, 1-32, 1998
- Zero dissipation and stability of shock waves, *Methods and Appl. Analysis*, 5, 81-94, 1998
- (with Wang, W.) The pointwise estimates of diffusion wave for the Navier-Stokes systems in odd dimensions, *Comm. Math. Phys.*, 196, 145-173, 1998
- (with Yu, S.-H.) Continuum shock profiles for discrete conservation laws, I. Construction, *Comm. Pure Appl. Math.*, 52 (1999), no. 1, 85-127.
- (with Zeng, Y.) Compressible Navier-Stokes equations with zero heat conductivity, *J. D. E.*, 153 (1999), no. 2, 225-291.
- Regularization of solution operators for quasilinear hyperbolic-parabolic partial differential equations, *J. Partial Differential Equations*, 10 (4), 347-354, 1997
- (with Yang, T.) L1 stability of constant states for hyperbolic conservation laws, *Methods and Appl. Analysis*, 4, 339-355, 1997
- (with Nishihara, K.) Asymptotic behaviour for scalar viscous conservation law with boundary effect, *J.D.E.*, 133, 296-320, 1997
- (with Xin, Z.) Pointwise decay to contact discontinuities for viscous conservation laws, *Asian J. Math.*, 1, 34-84, 1997

- (with Yang, T.) Compressible Euler equations with vacuum, *J.D.E.*, 140, 223-237, 1997
- Pointwise convergence to shock waves for viscous conservation laws, *Comm. Pure Appl. Math.* L , 1113-1182, 1997
- (with Yu, S.-H.) Propagation of Burgers stationary shocks under boundary effect, *Archive Rational Mech. Anal.*, 139, 57-82, 1997
- (with Zeng, Y.) Large time behavior of solutions of general quasilinear hyperbolic-parabolic systems of conservation laws, *Memoirs, Amer. Math. Soc.*, 125 (1997), no. 599, viii+120 pp.
- (with Li, D.; Tan, D.) Stability of strong detonation travelling waves to combustion model, *J. Math. Anal. Appl.*, 201, 516-531, 1996
- Gas flows with damping and vacuum, *Japan J. Indus. and Appl. Math.*, 13, 25-32, 1996
- Stability and viscosity criterion of shocks. Proceedings of the VIII International Conference on Waves and Stability in Continuous Media, Part I (Palermo, 1995). *Rend. Circ. Mat. Palermo* (2) Suppl. No. 45, part I (1996), 357-366, 1996
- (with Zumbrun, K.) On nonlinear stability of general undercompressive viscous shock waves, *Comm. Math. Phys.*, 175, 319-345, 1995
- (with Zumbrun, K.) Nonlinear stability of an undercompressive shock for complex Burgers equation, *Comm. Math. Physics*, 168, 163-186, 1995
- (with Ying, L.) Nonlinear stability strong detonations for a combustion model, *SIAM J. of Math. Anal.*, 26, 519-528, 1995
- Nonlinear hyperbolic-dissipative partial differential equations. Recent mathematical methods in nonlinear wave propagation (Montecatini Terme, 1994), 103-136, *Lecture Notes in Math.*, 1640, Springer, Berlin, 1996, Recent mathematical methods in nonlinear wave propagation , 1994/1996
- (with Bolliat, G.; Dafermos, C. M.; Lax, P. D.) Recent mathematical methods in nonlinear wave propagation. Lectures given at the 1st C.I.M.E. Session held in Montecatini Terme, May 23-31, 1994, 1994-05
- (with Chen, G.-Q.; Levermore, D.) Hyperbolic conservation laws with stiff relaxation terms and entropy, *Comm. Pure Applied Math.*, 47, 787-830, 1994
- Nonlinear evolutionary partial differential equations, *Proceedings of the International Conference held in Beijing*, 21-25, 1993
- (with Hsiao, L.) Nonlinear diffusive phenomena of nonlinear hyperbolic systems. A Chinese summary appears in Chinese Ann. Math. Ser. A 14 (1993), no. 6, 740. *Chinese Ann. Math. Ser. B* 14 (1993), no. 4, 465-480.
- (with Hsiao, L.) Nonlinear diffusive phenomena of nonlinear hyperbolic systems, *Chin. Ann. Math.*, 14, 465-480, 1993
- (with Le Floch, P.) Existence theory for nonlinear hyperbolic systems in nonconservative form, *Forum Math.*, 5, 261-280, 1993

- (with Freistühler, H.) Nonlinear stability of overcompressive shock waves in a rotationally invariant system of viscous conservation laws, *Comm. Math. Physics*, 153, 147-158, 1993
- (with Chen, G.-Q.) Zero relaxation and dissipation limits for hyperbolic conservation laws, *Comm. Pure Appl. Math.*, 46, 755-781, 1993
- (with Hsiao, L.) Convergence to nonlinear diffusion waves for solutions of a system of hyperbolic conservation laws with damping, *Comm. Math. Phys.*, 143, 599-605, 1992
- (with Xin, Z.) Stability of viscous shock waves associated with a nonstrictly hyperbolic conservation law, *Comm. Pure Appl. Math.*, XLV (1992), 361-388, 1992
- Interaction of nonlinear hyperbolic waves, Nonlinear Analysis, Academia Sinica, R.O.C., *World Scientific*, 171-184, 1991
- Nonlinear hyperbolic-parabolic p.d.e., Nonlinear Analysis, Academia Sinica, R.O.C., *World Scientific*, 161-170, 1991
- Viscosity criterion for hyperbolic conservation laws, *Proc. SIAM*. Ed. M. Shearer, 1991
- (with Zhang, T.) A scalar combustion model, *Arch. Rational Mech. Anal.*, 114, 297-312, 1991
- On the viscosity criterion for hyperbolic conservation laws. Viscous profiles and numerical methods for shock waves (Raleigh, NC, 1990), 105-114.
- (with Hsu, S.-B.) Nonlinear singular Sturm-Liouville problem and application to transonic flow through a nozzle, *Comm. Pure Appl. Math.*, 43, 31-61, 1990
- (with Xin, Z.) Over compressive shock waves nonlinear evolution equations that change types, ed. B. Keyfitz and M. Shearer, *IMA volumes in Math Appls.*, 27, 139-145, 1990
- Nonlinear hyperbolic waves. Nonlinear hyperbolic equations in applied sciences. *Rend. Sem. Mat. Univ. Politec. Torino* 1988, Special Issue, 269-277 (1989).
- Nonlinear analysis. Papers from the conference held in Taipei, June 19-24, 1989
- "Geometric theory of shock waves. Multidimensional hyperbolic problems and computations (Minneapolis, MN, 1989), 198-202.
- (with Hoff, D.) The inviscid limit for the Navier-Stokes equations of compressible, isentropic flow with shock data, *Indiana Univ. J.*, 38, 861-915, 1989
- (with Hsu, S.-B.) Local uniqueness of interior layer solution and its related stability property, *Nonlinear analysis (Taipei)*, 51-60, 1989
- Quasilinear hyperbolic-parabolic partial differential equations, *Algebra, analysis and geometry (Taipei)*, 185-197, 1988
- (with Xin, Z.) Nonlinear stability of rarefaction waves for compressible Navier-Stokes equations, *Comm. Math. Phys.*, 451-465, 1988
- Nonlinear waves for viscoelasticity with fading memory, *J. Diff. Equ.*, 76, 26-46, 1988

- Nonlinear resonance for quasilinear hyperbolic equation, *J. Math. Phys.*, 28, 2593-2602, 1987
- Hyperbolic conservation laws with relaxation, *Comm. Math. Phys.*, 108, 153-175, 1987
- Pointwise convergence to N-waves for hyperbolic conservation laws, *Bulletin, Inst. Math., Academia Sinica*, 15, 1-17, 1987
- Hyperbolic conservation laws and related topics. Partial differential equations of hyperbolic type and applications, 113-139, *World Sci. Publishing, Singapore*, 1987.
- (with Chern, I.-L.) Convergence to diffusion waves of solutions for viscous conservation laws, *Comm. Math. Phys.*, 110, 503-517, 1987
- (with Caflisch, R.) Stability of shock waves for the Broadwell equations, *Comm. Math. Phys.*, 39, 565-594, 1986
- Shock waves for compressible Navier-Stokes equations are stable, *Comm. Pure Appl. Math.*, 39, 565-594, 1986
- (with Huang, L. P.) Piecewise steady elements and Godunov-type difference scheme for duct flow, *Comp. Maths. with Appls.*, 12, 377-388, 1986
- Shock waves and diffusion waves. Nonlinear systems of partial differential equations in applied mathematics, Part 1 (Santa Fe, N.M., 1984), 283-291, *Lectures in Appl. Math.*, 23, *Amer. Math. Soc.*, Providence, RI, 1986.
- Nonlinear stability of shock waves for viscous conservation laws, *Memoirs, Amer. Math. Soc.*, 328, 1985
- Nonlinear stability of shock waves for viscous conservation laws, *Amer. Math. Soc. (N.S.)*, 12 (2), 233-236, 1985
- (with Wang, C. H.) On a system of nonstrictly hyperbolic system, *J.D.E.*, 57, 1-14, 1985
- Stability of nonlinear waves. Metastability and incompletely posed problems, Minneapolis, Minn., 259-267, 1985
- (with Galz, H.) The asymptotic analysis of wave interactions and numerical calculations of transonic nozzle flow, *Advances Appl.*, 5, 111-146, 1984
- (with Pierre, M.) Source-solutions and asymptotic behavior in conservation law, *J. Diff. Equ.*, 51, 419-441, 1984
- (with Li, C.) Asymptotic states for hyperbolic conservation laws with a moving source, *Advances in Appl. Math.*, 4, 353-379, 1983
- Resonance for quasilinear hyperbolic equation, *Bulletin Amer. Math. Soc.*, 6, 463-465, 1982
- (with Chorin, A.; Teng, Z. H.) Riemann problems for reacting gas with applications to transitions, *SIAM J. Appl. Math.*, 42, 964-981, 1982
- Nonlinear stability and instability of transonic flows through a nozzle, *Comm. Math. Phys.*, 83, 243-260, 1982

- Transonic gas flow in a duct of varying area, *Arch. Rat. Mech. and Anal.*, 80, 1-18, 1982
- Admissible solutions of hyperbolic conservation laws, *Memoirs, Amer. Math. Soc.*, 240, 1981
- (with Conlon, J. G.) Admissibility criteria for hyperbolic conservation laws, *Indiana Univ. Math. J.*, 30 (5), 641-652, 1981
- (with Smoller, J.) On the vacuum state for isentropic gas dynamics equations, *Advances in Math.*, 1, 345-359, 1980
- "probleme du vide pour les equations de la dynamique des gaz isentropiques. (French) [The problem of the vacuum for equations in isentropic gas dynamics] Nonlinear partial differential equations and their applications. *Collège de France Seminar*, Vol. II (Paris, 1979/1980), 319-326, 395.", 1979/1980
- A system of quasilinear hyperbolic partial differential equations. Trends in applications of pure mathematics to mechanics, Vol. III (Edinburgh, 1979), 179-189, 1979
- Quasilinear hyperbolic systems, *Comm. Math. Phys.*, 68, 142-172, 1979
- Development of singularities in the nonlinear waves for quasilinear hyperbolic partial differential equations, *J. Diff. Equations*, 33, 92-111, 1979
- (with Antman, S.) Traveling waves in hyperelastic rods, *Quarterly of Appl. Math.*, 36, 377-399, 1979
- The free piston problem for gas dynamics, *J. of Diff. Equations*, 39, 175-191, 1978
- Invariants and asymptotic behavior of solution of a conservation law, *Proceedings of A.M.S.*, 71, 227-231, 1978
- Asymptotic behavior of solutions of general systems of nonlinear hyperbolic conservation laws, *Indiana Univ. J.*, 27, 211-253, 1978
- The deterministic version of the Glimm scheme, *Comm. Math. Phys.*, 57, 135-148, 1977
- Linear and nonlinear large-time behaviors of solutions of hyperbolic conservation laws, *Comm. Pure Appl. Math.*, 30, 767-796, 1977
- Large-time behavior of solutions of initial and initial-boundary value problem of general system of hyperbolic conservation laws, *Comm. Math. Phys.*, 55, 163-177, 1977
- Decay to N-waves of solutions of general systems of nonlinear hyperbolic conservation laws, *Comm. Pure Appl. Math.*, 30, 586-611, 1977
- Initial-boundary value problems for gas dynamics, *Arc. Rat. Mech. and Anal.*, 64, 137-168, 1977
- Solutions in the large for equations of nonisentropic gas dynamics, *Indiana Univ. J.*, 26, 144-177, 1977
- The entropy condition and the admissibility of shocks, *J. of Math. Anal. and Applications*, 53, 75-88, 1976

- Shock waves in nonisentropic gas flow, *J. Diff. Equations*, 22, 442-452, 1976
- Uniqueness theorem of the Cauchy problem for general 2 X 2 conservation laws, *J. Diff. Eqs.*, 20, 369-388, 1976
- Existence and uniqueness theorems for Riemann problems, *Transactions of A.M.S.*, 212, 375-382, 1975
- The Riemann Problem for general systems of conservation laws, *J. Diff. Equations*, 18, 218-234, 1975
- The Riemann problem for general 2 X 2 conservation Laws, *Transactions of A.M.S.*, 199, 89-112, 1974