Bibliography

[1] Gerald Beresford Whitham. *Linear and nonlinear waves*, volume 42. John Wiley & Sons, 2011.

[2] Vishnu D Sharma. *Quasilinear hyperbolic systems, compressible flows, and waves*. CRC Press, 2010.

[3] Bernd Riemann, V. A. Belokogne, and Steven J. Bardwell. On the propagation of plane air waves of finite amplitude. 2010.

[4] Richard Courant and Kurt Otto Friedrichs. *Supersonic flow and shock waves*, volume 21. Springer Science & Business Media, 1999.

[5] Peter D Lax. *Hyperbolic systems of conservation laws and the mathematical theory of shock waves*. SIAM, 1973.

[6] Alan Jeffrey. Quasilinear hyperbolic systems and waves. *London*, 1976.

[7] Yuxi Zheng. *Systems of Conservation Laws: Two-Dimensional Riemannian Problems*. Springer Science & Business Media, 2001.

[8] Alberto Bressan. *Hyperbolic systems of conservation laws: the one-dimensional Cauchy problem*, volume 20. Oxford University Press on Demand, 2000.

[9] Constantine M Dafermos and Constantine M Dafermos. *Hyperbolic conservation laws in continuum physics*, volume 3. Springer, 2005.

[10] Ronald J DiPerna. Joel smoller, shock waves and reaction-diffusion equations. *Bulletin (New Series) of the American Mathematical Society*, 11(1):204–214, 1984.

[11] Bernhard Riemann. *Über die Fortpflanzung ebener Luftwellen von endlicher Schwingungsweite*. Dieterich, 1860.

[12] Shouxin Chen, Decheng Huang, and Xiaosen Han. The generalized riemann problem for first order quasilinear hyperbolic systems of conservation laws i. *Bulletin of the Korean Mathematical Society*, 46(3):409–434, 2009.

[13] Shouxin Chen, Xiaosen Han, and Hao Zhang. The generalized riemann problem for first order quasilinear hyperbolic systems of conservation laws ii. *Acta applicandae mathematicae*, 108(2):235–277, 2009.

[14] H Miura. Decay of shock waves in a dusty-gas shock tube. *Fluid dynamics research*, 6(5-6):251, 1990.

[15] Shih-I Pai. *Two-phase flows*, volume 3. Springer-Verlag, 2013.

[16] GB Whitham and Richard G Fowler. Linear and nonlinear waves. *Physics Today*, 28(6):55, 1975.

[17] Joel Smoller. *Shock waves and reaction—diffusion equations*, volume 258. Springer Science & Business Media, 2012.

[18] Helge Holden and Nils Henrik Risebro. *Front tracking for hyperbolic conservation laws*, volume 152. Springer, 2015.

[19] Randall J LeVeque et al. *Finite volume methods for hyperbolic problems*, volume 31. Cambridge university press, 2002.

[20] Hans Freudenthal. Riemann. *Dictionary of scientific biography*, 11, 1975.

[21] Tai-Ping Liu. *Admissible solutions of hyperbolic conservation laws*, volume 240. American Mathematical Soc., 1981.

[22] Tung Chang and Ling Hsiao. The riemann problem and interaction of waves in gas dynamics. *NASA STI/Recon Technical Report A*, 90:44044, 1989.

[23] Ralph Menikoff and Bradley J Plohr. The riemann problem for fluid flow of real materials. *Reviews of modern physics*, 61(1):75, 1989.

[24] Randolph G Smith. The riemann problem in gas dynamics. *Transactions of the American Mathematical Society*, 249(1):1–50, 1979.

[25] Burton Wendroff. The riemann problem for materials with nonconvex equations of state i: Isentropic flow. *Journal of Mathematical Analysis and Applications*, 38(2):454–466, 1972.

[26] Tommaso Ruggeri and Srboljub Simić. On the hyperbolic system of a mixture of eulerian fluids: a comparison between single-and multi-temperature models. *Mathematical methods in the applied sciences*, 30(7):827–849, 2007.

[27] Tai-Ping Liu. The riemann problem for general systems of conservation laws. *Journal of Differential Equations*, 18(1):218–234, 1975.

[28] Edwige Godlewski and Pierre-Arnaud Raviart. *Numerical approximation of hyperbolic systems of conservation laws*, volume 118. Springer Science & Business Media, 2013.

[29] James Glimm. Solutions in the large for nonlinear hyperbolic systems of equations. *Communications on pure and applied mathematics*, 18(4):697–715, 1965.

[30] Barbara Lee Keyfitz and Herbert C Kranzer. A viscosity approximation to a system of conservation laws with no classical riemann solution. In *Nonlinear hyperbolic problems*, pages 185–197. Springer, 1989.

[31] PH Hugoniot. Mémoire sur la propagation du mouvement dans les corps et plus spécialement dans les gaz parfaits, 2e partie, 58, 1887.

[32] Simeon-Denis Poisson. Memoir on the theory of sound. *J. Ecole Polytech. Paris*, 7:319–370, 1808.

[33] George Gabriel Stokes. Liv. on a difficulty in the theory of sound. *The London, Edinburgh, and Dublin philosophical magazine and journal of science*, 33(223):349–356, 1848.

[34] William John Macquorn Rankine. Xv. on the thermodynamic theory of waves of finite longitudinal disturbance. *Philosophical Transactions of the Royal Society of London*, (160):277–288, 1870.

[35] David Leonard Chapman. Vi. on the rate of explosion in gases. *The London, Edinburgh, and Dublin Philosophical Magazine and Journal of Science*, 47(284):90–104, 1899.

[36] Henri Hugoniot. Propagation du mouvement dans les corps. *J. Ec. Polyt. Paris*, 57:1–125, 1889.

[37] P Salcher and J Whitelaw. Uber den ausfluss stark verdichteter luft. *Sitzungsver, Akad. Wiss. Wien*, 98:267–287, 1889.

[38] Theodor Meyer. Ueber zweidimensionale bewegungs vorgaenge in einem gas, das mit ueberschallgeschwindigkeit stroemt. *Dissertation Goettingen*, 1908.

[39] Geoffrey Ingram Taylor. The conditions necessary for discontinuous motion in gases. *Proceedings of the Royal Society of London. Series A, Containing Papers of a Mathematical and Physical Character*, 84(571):371–377, 1910.

[40] N Rott. Jakob ackeret and the history of the mach number. *Annual Review of Fluid Mechanics*, 17(1):1–10, 1985.

[41] RH Cole. Diaphragm gauges, underwater explosions, 1948.

[42] JB Broderick. Supersonic flow round pointed bodies of revolution. *The Quarterly Journal of Mechanics and Applied Mathematics*, 2(1):98–120, 1949.

[43] TY Thomas. On curved shock waves. *Journal of Mathematics and Physics*, 26(1-4):62–68, 1947.

[44] RP Kanwal. Propagation of curved shocks in pseudo-stationary three-dimensional gas flows. *Illinois Journal of Mathematics*, 2(1):129–136, 1958.

[45] C Truesdell. On curved shocks in steady plane flow of an ideal fluid. *Journal of the Aeronautical Sciences*, 19(12):826–828, 1952.

[46] Wallace D Hayes. The vorticity jump across a gasdynamic discontinuity. *Journal of Fluid Mechanics*, 2(6):595–600, 1957.

[47] RP Kanwal. Flow behind shock waves in conducting gases. *Proceedings of the Royal Society of London. Series A. Mathematical and Physical Sciences*, 257(1289):263–268, 1960.

[48] Tosiya Taniuti and Chau-Chin Wei. Reductive perturbation method in nonlinear wave propagation. i. *Journal of the Physical Society of Japan*, 24(4):941–946, 1968.

[49] E Varley and E Cumberbatch. Non-linear, high frequency sound waves. *IMA Journal of Applied Mathematics*, 2(2):133–143, 1966.

[50] K Ambika, R Radha, and VD Sharma. Progressive waves in non-ideal gases. *International Journal of Non-Linear Mechanics*, 67:285–290, 2014.

[51] Triloki Nath, RK Gupta, and LP Singh. The progressive wave approach analyzing the evolution of shock waves in dusty gas. *International Journal of Applied and Computational Mathematics*, 3(1):1217–1228, 2017.

[52] E Varley and TG Rogers. The propagation of high frequency, finite acceleration pulses and shocks in viscoelastic materials. *Proceedings of the Royal Society of London. Series A. Mathematical and Physical Sciences*, 296(1447):498–518, 1967.

[53] VD Sharma, LP Singh, and Rishi Ram. The progressive wave approach analyzing the decay of a sawtooth profile in magnetogasdynamics. *The Physics of fluids*, 30(5):1572–1574, 1987.

[54] Brian R Seymour and MP Mortell. Nonlinear geometrical acoustics. *Mechanics Today*, 2:251–312, 1975.

[55] Rishi Ram. Effect of radiative heat transfer on the growth and decay of acceleration waves. *Applied Scientific Research*, 34(1):93–104, 1978.

[56] Rama Shankar. On growth and propagation of shock waves in radiation-magneto gas dynamics. *International journal of engineering science*, 27(11):1315–1323, 1989.

[57] VV Menon, VD Sharma, and A Jeffrey. On the general behavior of acceleration waves. *Applicable Analysis*, 16(2):101–120, 1983.

[58] KA Lindsay and B Straughan. Acceleration waves and second sound in a perfect fluid. *Archive for Rational Mechanics and Analysis*, 68(1):53–87, 1978.

[59] TW Wright. Acceleration waves in simple elastic materials. *Archive for Rational Mechanics and Analysis*, 50(4):237–277, 1973.

[60] Jace W Nunziato, James E Kennedy, and Edward K Walsh. The behavior of one-dimensional acceleration waves in an inhomogeneous granular solid. *International Journal of Engineering Science*, 16(9):637–648, 1978.

[61] EK Walsh and KW Schuler. Acceleration wave propagation in a nonlinear viscoelastic solid. 1973.

[62] LP Singh, R Singh, and SD Ram. Evolution and decay of acceleration waves in perfectly conducting inviscid radiative magnetogasdynamics. *Astrophysics and Space Science*, 342(2):371–376, 2012.

[63] H Miura and Irvine Israel Glass. On the passage of a shock wave through a dusty-gas layer. *Proceedings of the Royal Society of London. A. Mathematical and Physical Sciences*, 385(1788):85–105, 1983.

[64] SI Pai, S Menon, and ZQ Fan. Similarity solutions of a strong shock wave propagation in a mixture of a gas and dusty particles. *International Journal of Engineering Science*, 18(12):1365–1373, 1980.

[65] JP Vishwakarma and G Nath. Similarity solutions for unsteady flow behind an exponential shock in a dusty gas. *Physica Scripta*, 74(4):493, 2006.

[66] GF Carrier. Shock waves in a dusty gas. *Journal of Fluid Mechanics*, 4(4):376–382, 1958.

[67] LP Singh, VD Sharma, and N Gupta. Wave propagation in a steady supersonic flow of a radiating gas past plane and axisymmetric bodies. *Acta mechanica*, 73(1):213–220, 1988.

[68] JJ Gottlieb and Clinton PT Groth. Assessment of riemann solvers for unsteady one-dimensional inviscid flows of perfect gases. *Journal of Computational Physics*, 78(2):437–458, 1988.

[69] Eleuterio F Toro. *Riemann solvers and numerical methods for fluid dynamics: a practical introduction*. Springer Science & Business Media, 2013.

[70] Randall J LeVeque and Randall J Leveque. *Numerical methods for conservation laws*, volume 214. Springer, 1992.

[71] Alexandre Joel Chorin. Random choice solution of hyperbolic systems. *Journal of computational physics*, 22(4):517–533, 1976.

[72] Alexandre Joel Chorin. Numerical solution of the navier-stokes equations. *Mathematics of computation*, 22(104):745–762, 1968.

[73] Bram Van Leer. Towards the ultimate conservative difference scheme. v. a second-order sequel to godunov's method. *Journal of computational Physics*, 32(1):101–136, 1979.

[74] GB Whitham and Richard G Fowler. Linear and nonlinear waves. *Physics Today*, 28:55, 1975.

[75] John K Hunter. Asymptotic equations for nonlinear hyperbolic waves. In *Surveys in applied mathematics*, pages 167–276. Springer, 1995.

[76] A Kluwick and EA Cox. Nonlinear waves in materials with mixed nonlinearity. *Wave Motion*, 27(1):23–41, 1998.

[77] Richard Courant and David Hilbert. *Methods of Mathematical Physics: Partial Differential Equations*. John Wiley & Sons, 2008.

[78] Naruyoshi Asano and Tosiya Taniuti. Reductive perturbation method for nonlinear wave propagation in inhomogeneous media. ii. *Journal of the Physical Society of Japan*, 29(1):209–214, 1970.

[79] Naruyoshi Asano. Reductive perturbation method for nonlinear wave propagation in inhomogeneous media. iii. *Journal of the Physical Society of Japan*, 29(1):220–224, 1970.

[80] N Gupta, VD Sharma, RR Sharma, and BD Pandey. Propagation of rapid pulses through a two-phase mixture of gas and dust particles. *International journal of engineering science*, 30(3):263–272, 1992.

[81] Nanrong Zhao, Andrea Mentrelli, Tommaso Ruggeri, and Masaru Sugiyama. Admissible shock waves and shock-induced phase transitions in a van der waals fluid. *Physics of fluids*, 23(8):086101, 2011.

[82] LP Singh, SD Ram, and DB Singh. Propagation of weak shock waves in non-uniform, radiative magnetogasdynamics. *Acta Astronautica*, 67(3-4):296–300, 2010.

[83] Lal Pratap Singh, Dheerendra Bahadur Singh, and Subedar Ram. Evolution of weak shock waves in perfectly conducting gases. *Applied Mathematics*, 2(05):653, 2011.

[84] LP Singh, DB Singh, and SD Ram. Growth and decay of weak shock waves in magnetogasdynamics. *Shock Waves*, 26(6):709–716, 2016.

[85] Triloki Nath, RK Gupta, and LP Singh. Evolution of weak shock waves in non-ideal magnetogasdynamics. *Acta Astronautica*, 133:397–402, 2017.

[86] Rahul Kumar Chaturvedi, Shobhit Kumar Srivastava, and LP Singh. Evolution of acceleration waves in non-ideal radiative magnetogasdynamics. *The European Physical Journal Plus*, 134(11):564, 2019.

[87] Rahul Kumar Chaturvedi, Pooja Gupta, and LP Singh. Evolution of weak shock wave in two-dimensional steady supersonic flow in dusty gas. *Acta Astronautica*, 160:552–557, 2019.

[88] JP Vishwakarma and G Nath. A self-similar solution of a shock propagation in a mixture of a non-ideal gas and small solid particles. *Meccanica*, 44(3):239, 2009.

[89] Paul Germain. Progressive waves/14 th ludwig prandtl memorial lecture/(progressive waves analysis, considering nonlinear convective, dissipative and dispersive effects). *Deutsche Gesellschaft fuer Luft- und Raumfahrt, 1971 Yearbook.(A 73-16755 05-01) Cologne, Deutsche Gesellschaft fuer Luft- und Raumfahrt, 1972,*, pages 11–30, 1972.

[90] ASV Ravi Kanth and K Aruna. Differential transform method for solving linear and non-linear systems of partial differential equations. *Physics Letters A*, 372(46):6896–6898, 2008.

[91] Rahul Kumar Chaturvedi, Shobhit Kumar Srivastava, and LP Singh. Effect of solid dust particles on the propagation of shock wave in planar and non-planar gasdynamics. *Chinese Journal of Physics*, 65:114–122, 2020.

[92] WA Green. The growth of plane discontinuities propagating into a homogeneously deformed elastic material. *Archive for Rational Mechanics and Analysis*, 16(2):79–88, 1964.

[93] VD Sharma and Radhe Shyam. Growth and decay of weak discontinuities in radiative gasdynamics. *Acta Astronautica*, 8(1):31–45, 1981.

[94] Kajal Sharma and Rajan Arora. Interaction of an acceleration wave with a characteristic shock in interstellar gas clouds. *Ricerche di Matematica*, pages 1–13, 2021.

[95] K Shibasaki, S Shibasaki, G Jagadeesh, M Sun, and K Takayama. Development of a high-speed cylindrical rotor device for industrial applications of shock waves. In *Proceedings of 23rd International Symposium on Shock Waves*, 2001.

[96] G Jagadeesh. Fascinating world of shock waves. *Resonance*, 13(8):752–767, 2008.

[97] THOMAS A Weaver. The structure of supernova shock waves. *The Astrophysical Journal Supplement Series*, 32:233–282, 1976.

[98] M Abramowicz, M Jaroszynski, and M Sikora. Relativistic, accreting disks. *Astronomy and Astrophysics*, 63:221–224, 1978.

[99] Gary T Horowitz and Nissan Itzhaki. Black holes, shock waves, and causality in the ads/cft correspondence. *Journal of High Energy Physics*, 1999(02):010, 1999.

[100] Tapas K Das. Generalized shock solutions for hydrodynamic black hole accretion. *The Astrophysical Journal*, 577(2):880, 2002.

[101] Shobhit Kumar Srivastava, Rahul Kumar Chaturvedi, and LP Singh. On the evolution of finite and small amplitude waves in non-ideal gas with dust particles. *Physica Scripta*, 95(6):065205, 2020.

[102] R Nandkeolyar, GS Seth, OD Makinde, P Sibanda, and Md S Ansari. Unsteady hydromagnetic natural convection flow of a dusty fluid past an impulsively

moving vertical plate with ramped temperature in the presence of thermal radiation. *Journal of Applied Mechanics*, 80(6), 2013.

[103] Gauri Shanker Seth and Prashanta Kumar Mandal. Gravity-driven convective flow of magnetite-water nanofluid and radiative heat transfer past an oscillating vertical plate in the presence of magnetic field. *Latin American Applied Research*, 48:7–13, 2018.

[104] GS Seth, GK Mahato, and S Sarkar. Mhd natural convection flow with radiative heat transfer past an impulsively moving vertical plate with ramped temperature in the presence of hall current and thermal diffusion. *International Journal of Applied Mechanics and Engineering*, 18(4), 2013.

[105] Susmay Nandi, Bidyasagar Kumbhakar, Gauri Shanker Seth, and Ali J Chamkha. Features of 3d magneto-convective nonlinear radiative williamson nanofluid flow with activation energy, multiple slips and hall effect. *Physica Scripta*, 96(6):065206, 2021.

[106] Prashanta Kumar Mandal, Gauri Shanker Seth, Subharthi Sarkar, and Ali Chamkha. A numerical simulation of mixed convective and arbitrarily oblique radiative stagnation point slip flow of a cnt-water mhd nanofluid. *Journal of Thermal Analysis and Calorimetry*, 143(3):1901–1916, 2021.

[107] Rohit Sharma, Syed Modassir Hussain, Hitesh Joshi, and Gauri Shenkar Seth. Analysis of radiative magneto-nanofluid over an accelerated plate in a rotating medium with hall effects. In *Diffusion Foundations*, volume 11, pages 129–145. Trans Tech Publ, 2017.

[108] Marica Pelanti and Randall J LeVeque. High-resolution finite volume methods for dusty gas jets and plumes. *SIAM Journal on Scientific Computing*, 28(4):1335–1360, 2006.

[109] FK Lamb, BW Callen, and JD Sullivan. An approximate analytical model of shock waves from underground nuclear explosions. *Journal of Geophysical Research: Solid Earth*, 97(B1):515–535, 1992.

[110] R Klemens, P Zydak, M Kaluzny, D Litwin, and P Wolanski. Dynamics of dust dispersion from the layer behind the propagating shock wave. *Journal of Loss Prevention in the Process Industries*, 19(2-3):200–209, 2006.

[111] Yicheng Pang, Jianjun Ge, Huawei Yang, and Min Hu. The riemann problem for an isentropic ideal dusty gas flow with a magnetic field. *Mathematical Methods in the Applied Sciences*, 43(7):4036–4049, 2020.

[112] JP Chaudhary and LP Singh. Riemann problem and elementary wave interactions in dusty gas. *Applied Mathematics and Computation*, 342:147–165, 2019.

[113] Rahul Kumar Chaturvedi and LP Singh. The phenomena of concentration and cavitation in the riemann solution for the isentropic zero-pressure dusty gasdynamics. *Journal of Mathematical Physics*, 62(3):033101, 2021.

[114] Fumio Higashino and Tateyuki Suzuki. The effect of particles on blast waves in a dusty gas. *Zeitschrift für Naturforschung A*, 35(12):1330–1336, 1980.

[115] Pooja Gupta, Rahul Kumar Chaturvedi, and LP Singh. Interaction of waves in one-dimensional dusty gas flow. *Zeitschrift für Naturforschung A*, 76(3):201–208, 2021.

[116] Guillaume Laibe and Daniel J Price. Dusty gas with one fluid. *Monthly Notices of the Royal Astronomical Society*, 440(3):2136–2146, 2014.

[117] Rajan Arora and VD Sharma. Convergence of strong shock in a van der waals gas. *SIAM Journal on Applied Mathematics*, 66(5):1825–1837, 2006.

[118] LP Singh, SD Ram, and DB Singh. Exact solution of planar and nonplanar weak shock wave problem in gasdynamics. *Chaos, Solitons & Fractals*, 44(11):964–967, 2011.

[119] JP Vishwakarma and G Nath. Spherical shock wave generated by a moving piston in mixture of a non-ideal gas and small solid particles under a gravitational field. *Communications in Nonlinear Science and Numerical Simulation*, 17(6):2382–2393, 2012.

[120] Deepika Singh, Rajan Arora, and Astha Chauhan. Similarity solutions for strong shock waves in magnetogasdynamics under a gravitational field. *Ricerche di Matematica*, pages 1–20, 2020.

[121] Mohd Junaid Siddiqui, Rajan Arora, and Anoop Kumar. Shock waves propagation under the influence of magnetic field. *Chaos, Solitons & Fractals*, 97:66–74, 2017.

[122] Eric Varley. Acceleration fronts in viscoelastic materials. *Archive for Rational Mechanics and Analysis*, 19(3):215–225, 1965.

[123] David C Chou and Boa-Teh Chu. On the decay of weak shock waves in axisymmetric non-equilibrium flow. *Journal of Fluid Mechanics*, 50(2):355–367, 1971.

[124] Milton Van Dyke and AJ Guttmann. The converging shock wave from a spherical or cylindrical piston. *Journal of Fluid Mechanics*, 120:451–462, 1982.

[125] CC Wu and PH Roberts. Structure and stability of a spherical shock wave in a van der waals gas. *Quarterly journal of mechanics and applied mathematics*, 49(4):501–543, 1996.

[126] Joseph B Keller. Geometrical acoustics. i. the theory of weak shock waves. *Journal of Applied Physics*, 25(8):938–947, 1954.

[127] Meera Chadha and J Jena. Impact of dust in the decay of blast waves produced by a nuclear explosion. *Proceedings of the Royal Society A*, 476(2238):20200105, 2020.

[128] Walter Gretler and Rene Regenfelder. Similarity solution for variable energy shock waves in a dusty gas under isothermal flow-field condition. *Fluid dynamics research*, 32(3):69, 2003.

[129] O Igra, G Hu, J Falcovitz, and BY Wang. Shock wave reflection from a wedge in a dusty gas. *International journal of multiphase flow*, 30(9):1139–1169, 2004.

[130] G Nath. Propagation of exponential shock wave in an axisymmetric rotating non-ideal dusty gas. *Indian Journal of Physics*, 90(9):1055–1068, 2016.

[131] Kajal Sharma, Astha Chauhan, and Rajan Arora. Steepening of waves in non-ideal reacting gas with dust particles. *Indian Journal of Physics*, 95(9):1813–1819, 2021.

[132] Marian Puttscher and André Melzer. Dust particles under the influence of crossed electric and magnetic fields in the sheath of an rf discharge. *Physics of Plasmas*, 21(12):123704, 2014.

[133] GE Morfill and E Grün. The motion of charged dust particles in interplanetary space—i. the zodiacal dust cloud. *Planetary and Space Science*, 27(10):1269–1282, 1979.

[134] Kajal Sharma, Rajan Arora, Astha Chauhan, and Ashish Tiwari. Propagation of waves in a nonideal magnetogasdynamics with dust particles. *Zeitschrift für Naturforschung A*, 75(3):193–200, 2020.

[135] Guy J Consolmagno. Influence of the interplanetary magnetic field on cometary and primordial dust orbits: Applications of lorentz scattering. *Icarus*, 43(2):203–214, 1980.

[136] C Eswaraiah, G Maheswar, AK Pandey, J Jose, AN Ramaprakash, and HC Bhatt. A study of the starless dark cloud ldn 1570: Distance, dust properties, and magnetic field geometry. *Astronomy & Astrophysics*, 556:A65, 2013.

[137] Lapo Fanciullo, Vincent Guillet, François Boulanger, and AP Jones. Interplay of dust alignment, grain growth, and magnetic fields in polarization: lessons from the emission-to-extinction ratio. *Astronomy & Astrophysics*, 602:A7, 2017.

[138] T Elperin, G Ben-Dor, and O Igra. Head-on collision of normal shock waves in dusty gases. *International journal of heat and fluid flow*, 8(4):303–312, 1987.

[139] Meera Chadha and J Jena. Propagation of weak waves in a dusty, van der waals gas. *Meccanica*, 51(9):2145–2157, 2016.

[140] PK Sahu. Cylindrical shock waves in rotational axisymmetric non-ideal dusty gas with increasing energy under the action of monochromatic radiation. *Physics of Fluids*, 29(8):086102, 2017.

[141] Helfried Steiner and Thomas Hirschler. A self-similar solution of a shock propagation in a dusty gas. *European Journal of Mechanics-B/Fluids*, 21(3):371–380, 2002.

[142] Sonu Mehla and J Jena. Shock wave kinematics in a relaxing gas with dust particles. *Zeitschrift für Naturforschung A*, 74(9):787–798, 2019.

[143] Th von Karman. Compressibility effects in aerodynamics. *Journal of the Aeronautical Sciences*, 8(9):337–356, 1941.

[144] Yan Wang, Hua Wang, and Cunyan Cui. The effect on the shock wave resulting from the rocket explosion on launch pad. In *IOP Conference Series: Earth and Environmental Science*, volume 358, page 042016. IOP Publishing, 2019.

[145] Gaetano Moschetti. Cosmological shock waves in general relativity. *General relativity and gravitation*, 19(2):155–170, 1987.

[146] Ya B Zel'Dovich, Yu P Raizer, Wallace D Hayes, Ronald F Probstein, and Stephen P Gill. Physics of shock waves and high-temperature hydrodynamic phenomena, vol. 1. *Journal of Applied Mechanics*, 34(4):1055, 1967.

[147] Shobhit Kumar Srivastava, Rahul Kumar Chaturvedi, and Lal Pratap Singh. On the evolution of acceleration discontinuities in van der waals dusty magnetogasdynamics. *Zeitschrift für Naturforschung A*, 76(5):435–443, 2021.

[148] Shobhit Kumar Srivastava, Rahul Kumar Chaturvedi, and Lal Pratap Singh. Weak discontinuities in one-dimensional compressible nonideal gas dynamics. *Zeitschrift für Naturforschung A*, 2022.

[149] VV Menon and VD Sharma. Characteristic wave fronts in magnetohydrodynamics. *Journal of Mathematical Analysis and Applications*, 81(1):189–203, 1981.

[150] GB Whitham. On the propagation of weak shock waves. *Journal of Fluid Mechanics*, 1(3):290–318, 1956.

[151] JC Raymond. Shock waves in the interstellar medium. *The Astrophysical Journal Supplement Series*, 39:1–27, 1979.

[152] P Mostafavi and GP Zank. The structure of shocks in the very local interstellar medium. *The Astrophysical Journal Letters*, 854(1):L15, 2018.

[153] AM Bykov and RA Treumann. Fundamentals of collisionless shocks for astrophysical application, 2. relativistic shocks. *The Astronomy and Astrophysics Review*, 19(1):1–67, 2011.

[154] Miao-Miao Wang and Zi-Niu Wu. Reflection of rightward moving shocks of the first and second families over a steady oblique shock wave. *Journal of Fluid Mechanics*, 936, 2022.

[155] Manoj Pandey. Evolution of weak discontinuities in non-ideal magnetogasdynamic equations. *International Journal of Applied and Computational Mathematics*, 1(2):257–265, 2015.

[156] VD Sharma, R Shyam, and LP Singh. Shock formation distance in a two-dimensional steady supersonic flow over a concave corner in radiative magnetogasdynamics. *ZAMM-Journal of Applied Mathematics and Mechanics/Zeitschrift für Angewandte Mathematik und Mechanik*, 67(2):87–92, 1987.

[157] SI Pai and AI Speth. Shock waves in radiation-magneto-gas dynamics. *The Physics of Fluids*, 4(10):1232–1237, 1961.

[158] PK Sahu. Spherical and cylindrical shocks in a non-ideal dusty gas with magnetic field under the action of heat conduction and radiation heat flux. *Physics of Fluids*, 32(6):066104, 2020.

[159] S-I Pai. Radiation gas dynamics. 1966.

[160] Sinclaire M Scala and Douglas H Sampson. Heat transfer in hypersonic flow with radiation and chemical reaction. Technical report, GENERAL ELECTRIC CO PHILADELPHIA PA MISSILE AND SPACE DIV, 1963.

[161] SI Pai and CK Tsao. A uniform flow of a radiating gas over a flat plate. In *International Heat Transfer Conference Digital Library*. Begel House Inc., 1966.

[162] Wilbert J Lick. The propagation of small disturbances in a radiating gas. *Journal of Fluid Mechanics*, 18(2):274–284, 1964.

[163] RE Marshak. Effect of radiation on shock wave behavior. *The Physics of Fluids*, 1(1):24–29, 1958.

[164] Rahul Kumar Chaturvedi, Shobhit Kumar Srivastava, and LP Singh. Evolution of acceleration waves in non-ideal radiative magnetogasdynamics. *The European Physical Journal Plus*, 134(11):1–11, 2019.

[165] Astha Chauhan. Shock wave propagation in a non-ideal rotating medium with azimuthal magnetic field effect using lie group technique. *Physics of Fluids*, 34(1):017101, 2022.

[166] Walter G Vincenti and Barrett S Baldwin. Effect of thermal radiation on the propagation of plane acoustic waves. *Journal of Fluid Mechanics*, 12(3):449–477, 1962.

[167] Rahul Kumar Chaturvedi, LP Singh, et al. The effect of dust particles on the evolution of planar and non-planar shock wave in two-dimensional supersonic flow of van der waals gas. *The European Physical Journal Plus*, 137(2):1–12, 2022.

[168] Shobhit Kumar Srivastava, Rahul Kumar Chaturvedi, and LP Singh. On the evolution of finite and small amplitude waves in non-ideal gas with dust particles. *Physica Scripta*, 95(6):065205, 2020.

[169] Peter D Lax. Hyperbolic systems of conservation laws ii. *Communications on pure and applied mathematics*, 10(4):537–566, 1957.

[170] Pierre-Louis Lions. *Mathematical Topics in Fluid Mechanics: Volume 2: Compressible Models*, volume 2. Oxford University Press on Demand, 1996.

[171] Jiequan Li and Hanchun Yang. Delta-shocks as limits of vanishing viscosity for multidimensional zero-pressure gas dynamics. *Quarterly of Applied mathematics*, 59(2):315–342, 2001.

[172] Hongjun Cheng. Riemann problem for one-dimensional system of conservation laws of mass, momentum and energy in zero-pressure gas dynamics. *Differential Equations & Applications*, 4(4):653–664, 2012.

[173] Börje Nilsson and VM Shelkovich. Mass, momentum and energy conservation laws in zero-pressure gas dynamics and delta-shocks. *Applicable Analysis*, 90(11):1677–1689, 2011.

[174] K Ambika and R Radha. Riemann problem in non-ideal gas dynamics. *Indian Journal of Pure and Applied Mathematics*, 47(3):501–521, 2016.

[175] Pooja Gupta, Rahul Kumar Chaturvedi, and LP Singh. Solution of riemann problem of conservation laws in van der waals gas. *Waves in Random and Complex Media*, pages 1–19, 2022.

[176] Yicheng Pang, Jianjun Ge, Zuozhi Liu, and Min Hu. The riemann problem for one-dimensional isentropic flow of a mixture of a non-ideal gas with small solid particles. *Results in Physics*, 15:102587, 2019.

[177] Yicheng Pang, Min Hu, and Jianjun Ge. The analytical solutions to one-dimensional non-ideal dusty gas flow. *Meccanica*, 56(9):2243–2255, 2021.

[178] Chun Shen. The riemann problem for the chaplygin gas equations with a source term. *ZAMM-Journal of Applied Mathematics and Mechanics/Zeitschrift für Angewandte Mathematik und Mechanik*, 96(6):681–695, 2016.

[179] Zhiqiang Shao. The riemann problem for the relativistic full euler system with generalized chaplygin proper energy density–pressure relation. *Zeitschrift für angewandte Mathematik und Physik*, 69(2):1–20, 2018.

[180] Yunfeng Zhang and Meina Sun. Concentration phenomenon of riemann solutions for the relativistic euler equations with the extended chaplygin gas. *Acta Applicandae Mathematicae*, 170(1):539–568, 2020.

[181] Zhiqiang Shao. Riemann problem with delta initial data for the isentropic relativistic chaplygin euler equations. *Zeitschrift für angewandte Mathematik und Physik*, 67(3):1–24, 2016.

[182] Rahul Kumar Chaturvedi and LP Singh. Riemann solutions to the logotropic system with a coulomb-type friction. *Ricerche di Matematica*, pages 1–14, 2020.

[183] Zhi-Qiang Shao. Global weakly discontinuous solutions to the mixed initial–boundary value problem for quasilinear hyperbolic systems. *Mathematical Models and Methods in Applied Sciences*, 19(07):1099–1138, 2009.

[184] Yicheng Pang, Jianjun Ge, Min Hu, and Liuyang Shao. Delta shock wave in a perfect fluid model with zero pressure. *Zeitschrift für Naturforschung A*, 74(9):767–775, 2019.

List of Publications (SCI/SCIE)

1. **Shobhit Kumar Srivastava**, Rahul Kumar Chaturvedi and L. P. Singh, On the evolution of finite and small amplitude waves in non-ideal gas with dust particles, ***Physica Scripta***, 95 (6), 065205 (2020) (IOP).

2. **Shobhit Kumar Srivastava**, Rahul Kumar Chaturvedi and L. P. Singh, Weak discontinuities in one-dimensional compressible non-ideal gas dynamics, ***Zeitschrift für Naturforschung A***, 77(5), 437-447 (2022) (De Gruyter).

3. **Shobhit Kumar Srivastava**, Rahul Kumar Chaturvedi and L. P. Singh, On the evolution of acceleration discontinuities in van der Waals dusty magneto-gasdynamics, ***Zeitschrift für Naturforschung A***, 76(5), 435-443 (2021) (De Gruyter).

4. Rahul Kumar Chaturvedi, **Shobhit Kumar Srivastava**, L.P. Singh, Evolution of acceleration waves in non-ideal radiative magnetogasdynamics, ***Eur. Phys. J. Plus*** 134(2019): 564-574 (Springer).

5. Rahul Kumar Chaturvedi, **Shobhit Kumar Srivastava**, L.P. Singh, Effect of solid dust particles on the propagation of shock wave in planar and non-planar gasdynamics, ***Chinese Journal of Physics***, 65 (2020): 114-122. (Elsevier).

6. Rahul Kumar Chaturvedi, Pooja Gupta, **Shobhit Kumar Srivastava** and L.P. Singh, Evolution of C^1 wave and its collision with the blast wave in one-dimensional non-ideal gas dynamics, ***Computational and Applied Mathematics***, (Springer), vol.39, no.3, pp. 1–13, 2020.

7. **Shobhit Kumar Srivastava**, Rahul Kumar Chaturvedi and L.P. Singh, The Riemann Problem for one-dimensional dusty gas dynamics with external forces, ***Waves in Random and Complex Media***, (Taylor & Francis), 2022.

8. **Shobhit Kumar Srivastava**, Rahul Kumar Chaturvedi and L.P. Singh, Propagation of shock wave in 2-D planar and axisymmetric non-ideal radiating gas flow under the influence of magnetic field, ***(Communicated)***.