

## List of publications (Kazuo Aoki)

### I. Papers

1. Y. Sone, K. Aoki, and Y. Onishi, “Imperfect accommodation effects on the flow induced by thermal stresses in a rarefied gas,” *J. Jpn. Soc. Aero. Space Sci.* **23**(261), 568–575 (1975) (in Japanese); *Heat Transfer Japanese Research* **6**(4), 1–12 (1977).
2. Y. Sone and K. Aoki, “Thermal force on an aerosol particle,” *J. Jpn. Soc. Aero. Space Sci.* **23**(261), 575–579 (1975) (in Japanese); *Heat Transfer Japanese Research* **6**(2), 62–68 (1977).
3. Y. Sone and K. Aoki, “Photophoresis,” *J. Jpn. Soc. Aero. Space Sci.* **24**(273), 513–517 (1976) (in Japanese).
4. Y. Sone and K. Aoki, “Slightly rarefied gas flow over a specularly reflecting body,” *Phys. Fluids* **20**(4), 571–576 (1977).
5. Y. Sone and K. Aoki, “Forces on a spherical particle in a slightly rarefied gas,” in *Rarefied Gas Dynamics*, edited by J. L. Potter (AIAA, New York, 1977), pp. 417–433.
6. K. Aoki and N. Tsuji, “Thermal force on a spherical particle with an outer shell in a slightly rarefied gas,” *J. Jpn. Soc. Aero. Space Sci.* **25**(285), 465–470 (1977) (in Japanese); *J. Aerosol Sci.* **10**(4), 395–404 (1979).
7. K. Aoki, T. Inamuro, and Y. Onishi, “Slightly rarefied gas flow over a body with small accommodation coefficient,” *J. Phys. Soc. Japan* **47**(2), 663–671 (1979).
8. Y. Sone and K. Aoki, “Thermal force and drag on a volatile particle in a slightly rarefied gas,” in *Rarefied Gas Dynamics*, edited by R. Campargue (Commissariat a l’Energie Atomique, Paris, 1979), pp. 1207–1218.
9. K. Aoki, “Thermal force on a sphere with uniform temperature in rarefied gas — Higher-order correction to thermal stress slip flow,” *J. Jpn. Soc. Aero. Space Sci.* **27**(310), 570–575 (1979) (in Japanese).
10. Y. Sone and K. Aoki, “Negative thermophoresis: Thermal stress slip flow around a spherical particle in a rarefied gas,” in *Rarefied Gas Dynamics*, edited by S. S. Fisher (AIAA, New York, 1981), pp. 489–503.
11. a. K. Aoki and H. Ishizuka, “Wall effect on circular cylinder in highly rarefied gas,” *J. Jpn. Soc. Aero. Space Sci.* **29**(335), 622–629 (1981) (in Japanese).  
b. K. Aoki and H. Ishizuka, “Forces on a circular cylinder in a highly rarefied gas bounded by a plane wall,” in *Rarefied Gas Dynamics*, edited by O. M. Belotserkovskii, M. N. Kogan, S. S. Kutateladze, and A. K. Rebrov (Plenum, New York, 1985), pp. 413–420.
12. Y. Sone and K. Aoki, “A similarity solution of the linearized Boltzmann equation with application to thermophoresis of a spherical particle,” *J. de Mécanique Théorique et Appliquée* **2**(1), 3–12 (1983).
13. K. Aoki and C. Cercignani, “Evaporation and condensation on two parallel plates at finite Reynolds numbers,” *Phys. Fluids* **26**(5), 1163–1164 (1983).

14. K. Aoki and C. Cercignani, “A technique for time-dependent boundary value problems in the kinetic theory of gases. Part I, Basic analysis,” *Z. Angew. Math. Phys.* **35**(2), 127–143 (1984).
15. K. Aoki and C. Cercignani, “A technique for time-dependent boundary value problems in the kinetic theory of gases. Part II, Application to sound propagation,” *Z. Angew. Math. Phys.* **35**(3), 345–362 (1984).
16. K. Aoki, “Photophoresis of a volatile particle in its vapor,” *J. de Mécanique Théorique et Appliquée* **3**(6), 825–841 (1984).
17. K. Aoki, “Kinetic theory of unsteady evaporation or condensation caused by sudden change of wall temperature,” in *Rarefied Gas Dynamics*, edited by H. Oguchi (Univ. of Tokyo Press, Tokyo, 1984), pp. 885–892.
18. K. Aoki and C. Cercignani, “On the matrix Riemann-Hilbert problem relevant to Rayleigh scattering,” *Z. Angew. Math. Phys.* **36**(1), 61–69 (1985).
19. K. Aoki, Y. Sone, and T. Ohwada, “Forces on heated circular cylinders in a highly rarefied gas,” in *Rarefied Gas Dynamics*, edited by V. Boffi and C. Cercignani (Teubner, Stuttgart, 1986), Vol. I, pp. 236–244.
20. Y. Sone, K. Aoki, and I. Yamashita, “A study of unsteady strong condensation on a plane condensed phase with special interest in formation of steady profile,” in *Rarefied Gas Dynamics*, edited by V. Boffi and C. Cercignani (Teubner, Stuttgart, 1986), Vol. II, pp. 323–333.
21.
  - a. Y. Sone and K. Aoki, “Steady gas flows past bodies at small Knudsen numbers — Boltzmann and hydrodynamic systems,” *Transport Theory and Statistical Physics* **16**(2 & 3), 189–199 (1987).
  - b. Y. Sone and K. Aoki, “Asymptotic theory of slightly rarefied gas flow and force on a closed body,” *Mem. Fac. Eng., Kyoto Univ.* **49**(3), 237–248 (1987).
22. K. Aoki and Y. Sone, “Temperature field induced around a sphere in a uniform flow of a rarefied gas,” *Phys. Fluids* **30**(7), 2286–2288 (1987).
23. V. Boffi and K. Aoki, “A system of conservation equations arising in nonlinear dynamics of gas mixtures,” *Nuovo Cimento D* **10**(2), 145–159 (1988).
24. V. Boffi and K. Aoki, “Nonlinear hyperbolicity in kinetic theory of a gas mixture,” *Nuovo Cimento D* **10**(9), 1013–1029 (1988).
25. Y. Sone, K. Aoki, H. Sugimoto, and T. Yamada, “Steady evaporation and condensation on a plane condensed phase,” *Theoretical and Applied Mechanics (Bulgarian Academy of Sciences)*, Year XIX, No. 3, 89–93 (1988).
26. Y. Sone, T. Ohwada, and K. Aoki, “Temperature jump and Knudsen layer in a rarefied gas over a plane wall: Numerical analysis of the linearized Boltzmann equation for hard-sphere molecules,” *Phys. Fluids A* **1**(2), 363–370 (1989).
27. K. Aoki, Y. Sone, and T. Yano, “Numerical analysis of a flow induced in a rarefied gas between noncoaxial circular cylinders with different temperatures for the entire range of the Knudsen number,” *Phys. Fluids A* **1**(2), 409–419 (1989).
28. K. Aoki and T. Doi, “Numerical analysis of structure and interaction of normal shock waves based on kinetic theory,” *J. Vac. Soc. Jpn.* **32**(3), 210–213 (1989) (in Japanese).

29. T. Ohwada, K. Aoki, and Y. Sone, "Heat transfer and temperature distribution in a rarefied gas between two parallel plates with different temperatures: Numerical analysis of the Boltzmann equation for a hard sphere molecule," in *Rarefied Gas Dynamics: Theoretical and Computational Techniques*, edited by E. P. Muntz, D. P. Weaver, and D. H. Campbell (AIAA, Washington, DC, 1989), pp. 70–81.
30. Y. Sone, T. Ohwada, and K. Aoki, "Evaporation and condensation on a plane condensed phase: Numerical analysis of the linearized Boltzmann equation for hard-sphere molecules," *Phys. Fluids A* **1**(8), 1398–1405 (1989).
31. T. Ohwada, Y. Sone, and K. Aoki, "Numerical analysis of the shear and thermal creep flows of a rarefied gas over a plane wall on the basis of the linearized Boltzmann equation for hard-sphere molecules," *Phys. Fluids A* **1**(9), 1588–1599 (1989).
32. T. Ohwada, Y. Sone, and K. Aoki, "Numerical analysis of the Poiseuille and thermal transpiration flows between two parallel plates on the basis of the Boltzmann equation for hard-sphere molecules," *Phys. Fluids A* **1**(12), 2042–2049 (1989).
33. K. Aoki, Y. Sone, and T. Yamada, "Numerical analysis of gas flows condensing on its plane condensed phase on the basis of kinetic theory," *Phys. Fluids A* **2**(10), 1867–1878 (1990).
34. Y. Sone, T. Ohwada, and K. Aoki, "Evaporation and condensation of a rarefied gas between its two parallel plane condensed phases with different temperatures and negative temperature-gradient phenomenon: Numerical analysis of the Boltzmann equation for hard-sphere molecules," in *Mathematical Aspects of Fluid and Plasma Dynamics*, Lecture Notes in Mathematics, Vol. 1460, edited by G. Toscani, V. Boffi, and S. Rionero (Springer-Verlag, Berlin, 1991), pp. 186–202.
35. G. Spiga and K. Aoki, "Exact solutions of a stochastic model of extended kinetic theory," in *Rarefied Gas Dynamics*, edited by A. E. Beylich (VCH, Weinheim, 1991), pp. 30–37.
36. K. Aoki, Y. Sone, K. Nishino, and H. Sugimoto, "Numerical analysis of unsteady motion of a rarefied gas caused by sudden changes of wall temperature with special interest in the propagation of a discontinuity in the velocity distribution function," in *Rarefied Gas Dynamics*, edited by A. E. Beylich (VCH, Weinheim, 1991), pp. 222–231.
37. K. Aoki and Y. Sone, "Gas flows around the condensed phase with strong evaporation or condensation: Fluid dynamic equation and its boundary condition on the interface and their application," in *Advances in Kinetic Theory and Continuum Mechanics*, edited by R. Gatignol and Soubbaramayer (Springer-Verlag, Berlin, 1991), pp. 43–54.
38. K. Aoki, K. Nishino, Y. Sone, and H. Sugimoto, "Numerical analysis of steady flows of a gas condensing on or evaporating from its plane condensed phase on the basis of kinetic theory: Effect of gas motion along the condensed phase," *Phys. Fluids A* **3**(9), 2260–2275 (1991).
39. S. Takata, Y. Sone, and K. Aoki, "Drag and thermal force on a spherical particle in a rarefied gas — Numerical analysis for all Knudsen numbers —," *J. Vac. Soc. Jpn.* **35**(3), 143–146 (1992) (in Japanese).
40. Y. Sone, K. Aoki, and T. Doi, "Kinetic theory analysis of gas flows condensing on a plane condensed phase: Case of a mixture of a vapor and a noncondensable gas," *Transport Theory and Statistical Physics* **21**(4–6), 297–328 (1992).

41. S. Takata, Y. Sone, and K. Aoki, “Numerical analysis of a uniform flow of a rarefied gas past a sphere on the basis of the Boltzmann equation for hard-sphere molecules,” *Phys. Fluids A* **5**(3), 716–737 (1993).
42. K. Aoki, C. Bardos, F. Golse, M. N. Kogan, and Y. Sone, “Steady flows of a rarefied gas around arbitrary obstacle distributions,” *Eur. J. Mech., B/Fluids* **12**(5), 565–577 (1993).
43. S. Takata, Y. Sone, and K. Aoki, “Thermophoresis of a spherical aerosol particle: Numerical analysis based on kinetic theory of gases,” *J. Aerosol Sci.* **24**, Suppl. 1, S147–S148 (1993).
44. K. Aoki and N. Masukawa, “Gas flows caused by evaporation and condensation on two parallel condensed phases and the negative temperature gradient: Numerical analysis by using a nonlinear kinetic equation,” *Phys. Fluids* **6**(3), 1379–1395 (1994).
45. T. Doi, K. Aoki, and Y. Sone, “Numerical analysis of unsteady evaporating flows from a plane condensed phase into a noncondensable gas on the basis of kinetic theory,” *J. Vac. Soc. Jpn.* **37**(3), 143–146 (1994) (in Japanese).
46. K. Aoki and T. Doi, “High-speed vapor flows condensing on a plane condensed phase in the presence of a noncondensable gas,” in *Rarefied Gas Dynamics: Theory and Simulations*, edited by B. D. Shizgal and D. P. Weaver (AIAA, Washington, DC, 1994), pp. 521–536.
47. S. Takata, K. Aoki, and Y. Sone, “Thermophoresis of a sphere with a uniform temperature: Numerical analysis of the Boltzmann equation for hard-sphere molecules,” in *Rarefied Gas Dynamics: Theory and Simulations*, edited by B. D. Shizgal and D. P. Weaver (AIAA, Washington, DC, 1994), pp. 626–639.
48. Y. Sone, T. Kataoka, T. Ohwada, H. Sugimoto, and K. Aoki, “Numerical examination of applicability of the linearized Boltzmann equation,” *Eur. J. Mech., B/Fluids* **13**(5), 573–589 (1994).
49. K. Aoki, Y. Sone, and N. Masukawa, “A rarefied gas flow induced by a temperature field,” in *Rarefied Gas Dynamics*, edited by J. Harvey and G. Lord (Oxford Univ. Press, Oxford, 1995), pp. 35–41.
50. Y. Sone, K. Aoki, H. Sugimoto, and H. Motohashi, “The Bénard problem of rarefied gas dynamics,” in *Rarefied Gas Dynamics*, edited by J. Harvey and G. Lord (Oxford Univ. Press, Oxford, 1995), pp. 135–141.
51. Y. Sone, K. Aoki, S. Takata, H. Sugimoto, and A. V. Bobylev, “Inappropriateness of the heat-conduction equation for description of a temperature field of a stationary gas in the continuum limit: Examination by a asymptotic analysis and numerical computation of the Boltzmann equation,” *Phys. Fluids* **8**(2), 628–638 (1996).
52. Y. Sone, Y. Waniguchi, and K. Aoki, “One-way flow of a rarefied gas induced in a channel with a periodic temperature distribution,” *Phys. Fluids* **8**(8), 2227–2235 (1996).
53. K. Aoki, K. Kanba, and S. Takata, “Numerical analysis of a supersonic rarefied gas flow past a flat plate,” *Phys. Fluids* **9**(4), 1144–1161 (1997).
54. K. Aoki, K. Kanba, and S. Takata, “Numerical analysis of a supersonic rarefied gas flow past a flat plate at an angle of attack,” in *Rarefied Gas Dynamics*, edited by C. Shen (Peking University Press, Beijing, 1997), pp. 279–284.

55. Y. Sone, K. Aoki, and H. Sugimoto, “The Bénard problem for a rarefied gas: Formation of steady flow patterns and stability of array of rolls,” *Phys. Fluids* **9**(12), 3898–3914 (1997).
56. K. Aoki, Y. Sone, and Y. Waniguchi, “A rarefied gas flow induced by a temperature field: Numerical analysis of the flow between two coaxial elliptic cylinders with different uniform temperatures,” *Computers Math. Applic.* **35**(1 & 2), 15–28 (1998).
57. K. Aoki, S. Takata, and S. Kosuge, “Vapor flows caused by evaporation and condensation on two parallel plane surfaces: Effect of the presence of a noncondensable gas,” *Phys. Fluids* **10**(6), 1519–1533 (1998).
58. Y. Sone, H. Sugimoto, and K. Aoki, “Cylindrical Couette flows of a rarefied gas with evaporation and condensation: Reversal and bifurcation of flows,” *Phys. Fluids* **11**(2), 476–490 (1999).
59. S. Takata, K. Aoki, and T. Muraki, “Behavior of a vapor-gas mixture between two parallel plane condensed phases in the continuum limit,” in *Rarefied Gas Dynamics*, edited by R. Brun, R. Campargue, R. Gatignol, and J.-C. Lengrand (Cépaduès-Éditions, Toulouse, 1999), Vol. 1, pp. 479–486.
60. Y. Sone, K. Aoki, and H. Sugimoto, “Stability of Bénard multi-rolls in a rarefied gas,” in *Rarefied Gas Dynamics*, edited by R. Brun, R. Campargue, R. Gatignol, and J.-C. Lengrand (Cépaduès-Éditions, Toulouse, 1999), Vol. 1, pp. 695–702.
61. K. Aoki, Y. Sone, and M. Yoshimoto, “Numerical analysis of the Taylor-Couette problem for a rarefied gas by the direct simulation Monte Carlo method,” in *Rarefied Gas Dynamics*, edited by R. Brun, R. Campargue, R. Gatignol, and J.-C. Lengrand (Cépaduès-Éditions, Toulouse, 1999), Vol. 2, pp. 109–116.
62. S. Takata and K. Aoki, “Two-surface problems of a multicomponent mixture of vapors and noncondensable gases in the continuum limit in the light of kinetic theory,” *Phys. Fluids* **11**(9), 2743–2756 (1999).
63.
  - a. S. Takata, K. Aoki, and C. Cercignani, “The velocity distribution function in an infinitely strong shock wave,” *Phys. Fluids* **12**(8), 2116–2127 (2000).
  - b. S. Takata, K. Aoki, and C. Cercignani, “The structure of an infinitely strong shock wave for hard sphere molecules,” in *Rarefied Gas Dynamics*, edited by T. J. Bartel and M. A. Gallis (AIP, Melville, 2001), pp. 313–320.
64. S. Kosuge, K. Aoki, and S. Takata, “Shock-wave structure for a binary gas mixture: Finite-difference analysis of the Boltzmann equation for hard-sphere molecules,” *Eur. J. Mech., B/Fluids* **20**(1), 87–126 (2001).
65. S. Takata and K. Aoki, “The ghost effect in the continuum limit for a vapor-gas mixture around condensed phases: Asymptotic analysis of the Boltzmann equation,” *Transport Theory and Statistical Physics* **30**(2 & 3), 205–237 (2001).
66. K. Aoki, “The behavior of a vapor-gas mixture in the continuum limit: Asymptotic analysis based on the Boltzmann equation,” in *Rarefied Gas Dynamics*, edited by T. J. Bartel and M. A. Gallis (AIP, Melville, 2001), pp. 565–574.
67. K. Aoki, Y. Sone, S. Takata, K. Takahashi, and G. A. Bird, “One-way flow of a rarefied gas induced in a circular pipe with a periodic temperature distribution,” in *Rarefied Gas Dynamics*, edited by T. J. Bartel and M. A. Gallis (AIP, Melville, 2001), pp. 940–947.

68. S. Kosuge, K. Aoki, and S. Takata, "Heat transfer in a gas mixture between two parallel plates: Finite-difference analysis of the Boltzmann equation," in *Rarefied Gas Dynamics*, edited by T. J. Bartel and M. A. Gallis (AIP, Melville, 2001), pp. 289–296.
69. K. Aoki, S. Takata, H. Aikawa, and F. Golse, "A rarefied gas flow caused by a discontinuous wall temperature," *Phys. Fluids* **13**(9), 2645–2661 (2001).
70. K. Aoki, C. Bardos, C. Dogbe, and F. Golse, "A note on the propagation of boundary induced discontinuities in kinetic theory," *Mathematical Models & Methods in Applied Sciences* **11**(9), 1581–1595 (2001).
71. E. P. Muntz, Y. Sone, K. Aoki, S. Vargo, and M. Young, "Performance analysis and optimization considerations for a Knudsen compressor in transitional flow," *J. Vac. Sci. Technol. A* **20**(1), 214–224 (2002).
72. P. Andries, K. Aoki, and B. Perthame, "A consistent BGK-type model for gas mixtures," *J. Stat. Phys.* **106**(5/6), 993–1018 (2002).
73. K. Aoki, S. Takata, and T. Nakanishi, "Poiseuille-type flow of a rarefied gas between two parallel plates driven by a uniform external force," *Phys. Rev. E* **65**(2), 026315:1–22 (2002).
74. K. Aoki, S. Takata, and S. Taguchi, "Vapor flows with evaporation and condensation in the continuum limit: Effect of a trace of noncondensable gas," *Eur. J. Mech., B/Fluids* **22**(1), 51–71 (2003).
75. S. Taguchi, K. Aoki, and S. Takata, "Vapor flows condensing at incidence onto a plane condensed phase in the presence of a noncondensable gas. I. Subsonic condensation," *Phys. Fluids* **15**(3), 689–705 (2003).
76. K. Aoki, S. Takata, K. Suzuki, "Numerical simulation of a vapor flow with evaporation and condensation in the presence of a small amount of a noncondensable gas," in *Rarefied Gas Dynamics*, edited by A. D. Ketsdever and E. P. Muntz (AIP, Melville, 2003), pp. 638–645.
77. S. Takata, S. Yasuda, K. Aoki, and T. Shibata, "Various transport coefficients occurring in binary gas mixtures and their database," in *Rarefied Gas Dynamics*, edited by A. D. Ketsdever and E. P. Muntz (AIP, Melville, 2003), pp. 106–113.
78. K. Aoki and P. Degond, "Homogenization of a flow in a periodic channel of small section," *Multiscale Model. Simul.* **1**(2), 304–334 (2003).
79. K. Aoki, C. Bardos, and S. Takata, "Knudsen layer for gas mixtures," *J. Stat. Phys.* **112**(3/4), 629–655 (2003).
80. K. Aoki, H. Yoshida, T. Nakanishi, and A. L. Garcia, "Inverted velocity profile in the cylindrical Couette flow of a rarefied gas," *Phys. Rev. E* **68**(1), 016302:1–11 (2003).
81. S. Takata, S. Yasuda, S. Kosuge, and K. Aoki, "Numerical analysis of thermal-slip and diffusion-slip flows of a binary mixture of hard-sphere molecular gases," *Phys. Fluids* **15**(12), 3745–3766 (2003).
82. S. Taguchi, K. Aoki, and S. Takata, "Vapor flows condensing at incidence onto a plane condensed phase in the presence of a noncondensable gas. II. Supersonic condensation," *Phys. Fluids* **16**(1), 79–92 (2004).

83. K. Aoki and S. Kosuge, “Finite-difference methods for the Boltzmann equation for binary gas mixtures,” in *Modelling and Computational Methods for Kinetic Equations*, edited by P. Degond, L. Pareschi, and G. Russo (Birkhäuser, Boston, 2004), pp. 147–167.
84. S. Yasuda, S. Takata, and K. Aoki, “Numerical analysis of the shear flow of a binary mixture of hard-sphere gases over a plane wall,” *Phys. Fluids* **16**(6), 1989–2003 (2004).
85. S. Taguchi, K. Aoki, and S. Takata, “Vapor flows in the continuum limit in the presence of a small amount of noncondensable gas,” *Phys. Fluids* **16**(11), 4105–4120 (2004).
86. S. Yasuda, S. Takata, and K. Aoki, “Evaporation and condensation of a binary mixture of vapors on a plane condensed phase: Numerical analysis of the linearized Boltzmann equation,” *Phys. Fluids* **17**(4), 047105:1–19 (2005).
87. K. Aoki, M. Hatano, S. Kosuge, and S. Takata, “Diffusiophoresis of a spherical volatile particle,” in *Rarefied Gas Dynamics*, edited by M. Capitelli (AIP, Melville, 2005), pp. 713–718.
88. H. Yoshida and K. Aoki, “A numerical study of Taylor–Couette problem for a rarefied gas: effect of rotation of the outer cylinder,” in *Rarefied Gas Dynamics*, edited by M. Capitelli (AIP, Melville, 2005), pp. 467–472.
89. S. Kosuge, K. Sato, S. Takata, and K. Aoki, “Flows of a binary mixture of rarefied gases between two parallel plates,” in *Rarefied Gas Dynamics*, edited by M. Capitelli (AIP, Melville, 2005), pp. 150–155.
90. A. V. Gusarov and K. Aoki, “Ionization degree for strong evaporation of metals,” *Phys. Plasmas* **12**(8), 083503:1–10 (2005).
91. H. Yoshida and K. Aoki, “Linear stability of the cylindrical Couette flow of a rarefied gas,” *Phys. Rev. E* **73**(2), 021201:1–18 (2006).
92. S. Takata, K. Aoki, S. Yasuda, and S. Kosuge, “Temperature, pressure, and concentration jumps for a binary mixture of vapors on a plane condensed phase: Numerical analysis of the linearized Boltzmann equation,” *Phys. Fluids* **18**(6), 067102:1–13 (2006).
93. S. Taguchi, K. Aoki, and V. Latocha, “Vapor flows along a plane condensed phase with weak condensation in the presence of a noncondensable gas,” *J. Stat. Phys.* **124**(2–4), 321–369 (2006).
94. H. Yoshida and K. Aoki, “Cylindrical Couette flow of a vapor-gas mixture: Ghost effect and bifurcation in the continuum limit,” *Phys. Fluids* **18**(8), 087103:1–16 (2006).
95. K. Aoki, P. Markowich, and S. Takata, “Kinetic relaxation models for energy transport,” *J. Stat. Phys.* **127**(2), 287–312 (2007).
96. S. Kosuge, H. Mizuno, and K. Aoki, “Numerical investigation on models of the Boltzmann equation for gas mixtures,” in *Rarefied Gas Dynamics*, edited by M. S. Ivanov and A. K. Rebrov (Siberian Branch of the Russian Academy of Sciences, Novosibirsk, 2007), pp. 286–291.
97. H. Yoshida and K. Aoki, “Numerical analysis of the cylindrical Couette flow of a vapor-gas mixture,” in *Rarefied Gas Dynamics*, edited by M. S. Ivanov and A. K. Rebrov (Siberian Branch of the Russian Academy of Sciences, Novosibirsk, 2007), pp. 432–437.

98. K. Aoki, P. Degond, L. Mieussens, M. Nishioka, and S. Takata, “Numerical simulation of a Knudsen pump using the effect of curvature of the channel,” in *Rarefied Gas Dynamics*, edited by M. S. Ivanov and A. K. Rebrov (Siberian Branch of the Russian Academy of Sciences, Novosibirsk, 2007), pp. 1079–1084.
99. C. J. T. Laneryd, K. Aoki, P. Degond, and L. Mieussens, “Thermal creep of a slightly rarefied gas through a channel with curved boundary,” in *Rarefied Gas Dynamics*, edited by M. S. Ivanov and A. K. Rebrov (Siberian Branch of the Russian Academy of Sciences, Novosibirsk, 2007), pp. 1111–1116.
100. C. J. T. Laneryd, K. Aoki, and S. Takata, “Slow flows of a vapor-gas mixture with large density and temperature variations in the near-continuum regime,” *Phys. Fluids* **19**(10), 107104:1–18 (2007).
101. K. Aoki, P. Degond, S. Takata, and H. Yoshida, “Diffusion models for Knudsen compressors,” *Phys. Fluids* **19**(11), 117103:1–21 (2007).
102. K. Aoki, P. Degond, L. Mieussens, S. Takata, and H. Yoshida, “A diffusion model for rarefied flows in curved channels,” *Multiscale Model. Simul.* **6**(4), 1281–1316 (2008).
103. K. Aoki, G. Cavallaro, C. Marchioro, and M. Pulvirenti, “On the motion of a body in thermal equilibrium immersed in a perfect gas,” *ESAIM: Math. Model. Numer. Anal.* **42**(2), 263–275 (2008).
104. M. Groppi, K. Aoki, G. Spiga, and V. Tritsch, “Shock structure analysis in chemically reacting gas mixtures by a relaxation-time kinetic model,” *Phys. Fluids* **20**(11), 117103:1–11 (2008).
105. K. Aoki, S. Takata, and K. Kugimoto, “Diffusion approximation for the Knudsen compressor composed of circular tubes,” in *Rarefied Gas Dynamics*, edited by T. Abe (AIP, Melville, 2009) pp. 953–958.
106. K. Aoki, P. Degond, and L. Mieussens, “Numerical simulations of rarefied gases in curved channels: Thermal creep, circulating flow, and pumping effect,” *Commun. Comput. Phys.* **6**(5), 919–954 (2009).
107. M. Groppi, L. Desvillettes, and K. Aoki, “Kinetic theory analysis of a binary mixture reacting on a surface,” *Eur. Phys. J. B* **70**(1), 117–126 (2009).
108. K. Aoki, T. Tsuji, and G. Cavallaro, “Approach to steady motion of a plate moving in a free-molecular gas under a constant external force,” *Phys. Rev. E* **80**(1), 016309:1–13 (2009).
109. K. Aoki, A. Jüngel, and P. A. Markowich, “Small velocity and finite temperature variations in kinetic relaxation models,” *Kinetic and Related Models* **3**(1), 1–15 (2010).
110. S. Takata, H. Funagane, and K. Aoki, “Fluid modeling for the Knudsen compressor: Case of polyatomic gases,” *Kinetic and Related Models* **3**(2), 353–372 (2010).
111. S. Kosuge, K. Aoki, and M. Hatano, “Slow evaporation and condensation on a spherical droplet in the presence of a noncondensable gas,” *Phys. Fluids* **22**(6), 067101:1–14 (2010).
112. T. Tsuji, K. Aoki, and F. Golse, “Relaxation of a free-molecular gas to equilibrium caused by interaction with vessel wall,” *J. Stat. Phys.* **140**(3), 518–543 (2010).



113. K. Aoki, S. Takata, E. Tatsumi, and H. Yoshida, “Rarefied gas flows through a curved channel: Application of a diffusion-type equation,” *Phys. Fluids* **22**(11), 112001:1–12 (2010).
114. K. Aoki, P. Charrier, and P. Degond, “A hierarchy of models related to nanoflows and surface diffusion,” *Kinetic and Related Models* **4**(1), 53–85 (2011).
115. K. Aoki and F. Golse, “On the speed of approach to equilibrium for a collisionless gas,” *Kinetic and Related Models* **4**(1), 87–107 (2011).
116. H. Funagane, S. Takata, K. Aoki, and K. Kugimoto, “Poiseuille flow and thermal transpiration of a rarefied polyatomic gas through a circular tube with applications to microflows,” *Bollettino dell’Unione Matematica Italiana Ser. 9*, **4**(1), 19–46 (2011).
117. S. Kosuge, K. Aoki, S. Takata, R. Hattori, and D. Sakai, “Steady flows of a highly rarefied gas induced by non-uniform wall temperature,” *Phys. Fluids* **23**(3), 030603:1–13 (2011).
118. T. Tsuji and K. Aoki, “Decay of an oscillating plate in a free-molecular gas,” in *Rarefied Gas Dynamics*, edited by D. A. Levin, I. J. Wysong, and A. L. Garcia (AIP, Melville, 2011), pp. 140–145.
119. S. Taguchi and K. Aoki, “Numerical analysis of rarefied gas flow induced around a flat plate with a single heated side,” in *Rarefied Gas Dynamics*, edited by D. A. Levin, I. J. Wysong, and A. L. Garcia (AIP, Melville, 2011), pp. 790–795.
120. K. Aoki and Y. Abe, “Stagnation-point flow of a rarefied gas impinging obliquely on a plane wall,” *Kinetic and Related Models* **4**(4), 935–954 (2011).
121. T. Tsuji and K. Aoki, “Decay of a linear pendulum in a free-molecular gas and in a special Lorentz gas,” *J. Stat. Phys.* **146**(3), 620–645 (2012).
122. S. Takata, K. Aoki, M. Hattori, and N. G. Hadjiconstantinou, “Parabolic temperature profile and second-order temperature jump of a slightly rarefied gas in an unsteady two-surface problem,” *Phys. Fluid* **24**(3), 032002:1–15 (2012).
123. S. Taguchi and K. Aoki, “Rarefied gas flow around a sharp edge induced by a temperature field,” *J. Fluid Mech.* **694**, 191–224 (2012).
124. G. A. Radtke, N. G. Hadjiconstantinou, S. Takata, and K. Aoki, “On the second-order temperature jump coefficient of a dilute gas,” *J. Fluid Mech.* **707**, 331–341 (2012).
125. S. Kosuge, K. Aoki, T. Inoue, D. B. Goldstein, and P. L. Varghese, “Unsteady flows in Io’s atmosphere caused by condensation and sublimation during and after eclipse: Numerical study based on a model Boltzmann equation,” *Icarus* **221**, 658–669 (2012).
126. T. Tsuji and K. Aoki, “Numerical analysis of nonlinear acoustic wave propagation in a rarefied gas,” in *28th International Symposium on Rarefied Gas Dynamics 2012: AIP Conf. Proc. 1501*, edited by M. Mareschal and A. Santos (AIP, Melville, 2012), pp. 115–122.
127. S. Taguchi and K. Aoki, “A simple model for flows around moving vanes in Crookes radiometer,” in *28th International Symposium on Rarefied Gas Dynamics 2012: AIP Conf. Proc. 1501*, edited by M. Mareschal and A. Santos (AIP, Melville, 2012), pp. 786–793.

128. S. Kosuge and K. Aoki, “Numerical analysis of Io’s atmospheric behavior during eclipse based on a model Boltzmann equation,” in *28th International Symposium on Rarefied Gas Dynamics 2012: AIP Conf. Proc. 1501*, edited by M. Mareschal and A. Santos (AIP, Melville, 2012), pp. 1541–1548.
129. T. Tsuji and K. Aoki, “Moving boundary problems for a rarefied gas: Spatially one-dimensional case,” *J. Comp. Phys.* **250**, 574–600 (2013).
130. K. Aoki, S. Takata, and T. Tomota, “A force acting on an oblate spheroid with discontinuous surface temperature in a slightly rarefied gas,” *J. Fluid Mech.* **748**, 712–730 (2014).
131. T. Tsuji and K. Aoki, “Decay of a linear pendulum in a collisional gas: Spatially one-dimensional case,” *Phys. Rev. E* **89**(5), 052129:1–14 (2014).
132. T. Tsuji and K. Aoki, “Gas motion in a microgap between a stationary plate and a plate oscillating in its normal direction,” *Microfluid. Nanofluid.* **16**(6), 1033–1045 (2014).
133. K. Aoki, R. Kagaya, S. Kosuge, and H. Yoshida, “Numerical analysis of the Taylor-vortex flow of a slightly rarefied gas,” in *29th International Symposium on Rarefied Gas Dynamics 2014: AIP Conf. Proc. 1628*, edited by J. Fan (AIP, Melville, 2014), pp. 60–67.
134. K. Aoki, M. Pulvirenti, S. Simonella, and T. Tsuji, “Backward clusters, hierarchy and Wild sums for a hard sphere system in a low-density regime,” *Mathematical Models & Methods in Applied Sciences* **25**(5), 995–1010 (2015).
135. S. Taguchi and K. Aoki, “Motion of an array of plates in a rarefied gas caused by radiometric force,” *Phys. Rev. E* **91**(6), 063007:1–15 (2015).
136. K. Aoki, F. Golse, and S. Kosuge, “The steady Boltzmann and Navier–Stokes equations,” *Bulletin of the Institute of Mathematics, Academia Sinica (new ser.)* **10**(2), 205–257 (2015).
137. K. Aoki, V. Giovangigli, and M. Hattori, “A kinetic model of adsorption on solid surfaces,” in *30th International Symposium on Rarefied Gas Dynamics: AIP Conf. Proc. 1786*, edited by A. Ketsdever and H. Struchtrup (AIP, Melville, 2016), 100005: 1–8.
138. S. Kosuge, K. Aoki, and T. Goto, “Shock wave structure in polyatomic gases: Numerical analysis using a model Boltzmann equation,” in *30th International Symposium on Rarefied Gas Dynamics: AIP Conf. Proc. 1786*, edited by A. Ketsdever and H. Struchtrup (AIP, Melville, 2016), 180004: 1–8.
139. K. Aoki, S. Kosuge, T. Fujiwara, and T. Goudon, “Unsteady motion of a slightly rarefied gas caused by a plate oscillating in its normal direction,” *Phys. Rev. Fluids* **2**(1), 013402: 1–33 (2017).
140. K. Aoki, C. Baranger, M. Hattori, S. Kosuge, G. Martalò, J. Mathiaud, and L. Mieussens, “Slip boundary conditions for the compressible Navier–Stokes equations,” *J. Stat. Phys.* **169**(4), 744–781 (2017).
141. S. Kosuge and K. Aoki, “Shock-wave structure for a polyatomic gas with large bulk viscosity,” *Phys. Rev. Fluids* **3**(2), 023401: 1–42 (2018).
142. M. Hattori, S. Kosuge, and K. Aoki, “Slip boundary conditions for the compressible Navier–Stokes equations for a polyatomic gas,” *Phys. Rev. Fluids* **3**(6), 063401: 1–46 (2018).

143. K. Aoki and V. Giovangigli, “Kinetic model of adsorption on crystal surfaces,” *Phys. Rev. E* **99**(5), 052137: 1–25 (2019).
144. K. Aoki and V. Giovangigli, “A kinetic model of reactive crystal surfaces,” in *31st International Symposium on Rarefied Gas Dynamics: AIP Conf. Proc. 2132*, edited by Y. Zhang, D. R. Emerson, D. Lockerby, and L. Wu (AIP, Merville, 2019), 130003: 1–8.
145. S. Kosuge, H.-W. Kuo, and K. Aoki, “A kinetic model for a polyatomic gas with temperature-dependent specific heats and its application to shock-wave structure,” *J. Stat. Phys.* **177**(2), 209–251 (2019).
146. K. Aoki, Y.-C. Lin, and K.-C. Wu, “Milne problem for the linear and linearized Boltzmann equations relevant to a binary gas mixture,” *J. Differ. Equ.* **269**, 257–287 (2020).
147. K. Aoki, M. Bisi, M. Groppi, and S. Kosuge, “Two-temperature Navier–Stokes equations for a polyatomic gas derived from kinetic theory,” *Phys. Rev. E* **102**, 023104: 1–23 (2020).
148. K. Aoki and V. Giovangigli, “Kinetic theory of chemical reactions on crystal surfaces,” *Physica A* **565**, 125573: 1–43 (2021).
149. K. Aoki, M. Bisi, M. Groppi, and S. Kosuge, “A note on the steady Navier–Stokes equations derived from an ES-BGK model for a polyatomic gas,” *Fluids* **6**(1), 32: 1–22 (2021).

## II. Reviews and Books

1. K. Aoki, “Forces on a small particle in a gas — Application of the generalized slip flow theory —,” *J. Jpn. Soc. Aero. Space Sci.* **30**(342), 416–424 (1982) (in Japanese).
2. Y. Sone and K. Aoki, “Rarefied Gas Dynamics,” *Oyo-Butsuri* **54**(5), 436–447 (1985) (in Japanese).
3. Y. Sone, K. Aoki, and T. Ohwada, “Forces on heated bodies in a highly rarefied gas,” *J. Jpn. Soc. Aero. Space Sci.* **34**(390), 386–395 (1986) (in Japanese).
4. Y. Sone and K. Aoki, “Rarefied Gas Dynamics (Molecular Gas Dynamics),” in *Handbook of Fluid Mechanics*, edited by Jpn. Soc. Fluid Mech. (Maruzen, Tokyo, 1987), Chap. 14 [edition and Secs. 14-1~14-5: Sone; Secs. 14-6 and 14-7: Aoki] (in Japanese).
5. K. Aoki, “Recent theoretical studies in molecular gas dynamics,” *J. Jpn. Soc. Aero. Space Sci.* **37**(421), 98–110 (1989) (in Japanese).
6. K. Aoki, “Numerical analysis of rarefied gas flows by finite-difference method,” in *Rarefied Gas Dynamics: Theoretical and Computational Techniques*, edited by E. P. Muntz, D. P. Weaver, and D. H. Campbell (AIAA, Washington, DC, 1989), pp. 297–322.
7. K. Aoki, “Analysis of low-pressure gas flows,” in *The World of Fluid Dynamics*, edited by Jpn. Soc. Fluid Mech. (Asakura, Tokyo, 1990), Chap. 3 (in Japanese).
8. K. Aoki, “Note on the conditions at interfaces,” “Conditions on interfaces between vapor and condensed phase,” and “Forces acting on a small particle in a gas and its motion,” in *Multiphase Fluid Dynamics*, edited by Jpn. Soc. Fluid Mech. (Asakura, Tokyo, 1991), Secs. 2.1.1, 2.1.3, and 2.2.2 (in Japanese).

9. K. Aoki, “Rarefied Gas Dynamics,” in *Handbook of Aerospace Engineering (2nd ed.)*, edited by Jpn. Soc. Aero. Space Sci. (Maruzen, Tokyo, 1992), A 3. 1. 6 (in Japanese).
10. Y. Sone and K. Aoki, *Molecular Gas Dynamics* (Asakura, Tokyo, 1994) (in Japanese).
11. S. Takata and K. Aoki, “Gas flows around an aerosol particle and forces acting on it — Numerical analysis based on the Boltzmann equation —,” *J. Aerosol Res. (Japan)* **10**(2), 95–105 (1995) (in Japanese).
12. Y. Sone and K. Aoki, “Rarefied Gas Dynamics (Molecular Gas Dynamics),” in *Handbook of Fluid Mechanics (2nd ed.)*, edited by Jpn. Soc. Fluid Mech. (Maruzen, Tokyo, 1998), Chap. 21 [edition and Secs. 21-1~21-4: Sone; Secs. 21-5 and 21-6 and Appendix: Aoki] (in Japanese).
13. K. Aoki, “Dynamics of rarefied gas flows: Asymptotic and numerical analyses of the Boltzmann equation,” AIAA Paper 2001-0874, American Institute of Aeronautics and Astronautics (2001).
14. K. Aoki, P. Degond, and R. Illner (guest editors), *Proceedings of the sixth International Workshop on Mathematical Aspects of Fluid and Plasma Dynamics*, Bulletin of the Institute of Mathematics, Academia Sinica (new ser.), **2**(2) (2007).
15. K. Aoki, F. Golse, T.-P. Liu, and S.-H. Yu (guest editors), *Special issue dedicated to the seventieth birthday of Prof. Yoshio Sone*, Bulletin of the Institute of Mathematics, Academia Sinica (new ser.), **2**(4) (2007) and **3** (1) (2008).
16. K. Aoki, “Fluid dynamics for gaseous mixtures derived from kinetic theory,” (Harold Grad Lecture), in *Rarefied Gas Dynamics*, edited by T. Abe (AIP, Melville, 2009), pp. 15–24.
17. K. Aoki and S. Takata, “Fluid models and simulations of internal rarefied gas flows,” *Riv. Mat. Univ. Parma, Serie* **8**, Vol. 1, 1–69 (2009).
18. K. Aoki, R. Esposito, R. Illner, and G. Toscani (guest editors), *Special issue on kinetic theory and kinetic models: To the memory of Carlo Cercignani*, Kinetic and Related Models, American Institute of Mathematical Sciences, **4**(1) (2011).
19. K. Aoki, “Numerical analysis of low-pressure gas flows induced by temperature fields,” *Nagare* **31**(2), 105–110 (2012) (in Japanese).
20. K. Aoki and T. Tsuji, “Numerical analysis of moving boundary problems in molecular gas dynamics,” *Nagare* **32**(3), 233–238 (2013) (in Japanese).
21. K. Aoki, “Numerical simulation of low-pressure gas flows,” *Simulation: J. Jpn. Soc. Simul. Tech.* **32**(4), 63–69 (2013) (in Japanese).