Seminars and invited lectures (Kazuo Aoki)

1. "Sound propagation according to kinetic theory," Seminar, Department of Mathematics, Chalmers University of Technology and University of Göteborg, Göteborg, Sweden (June 16, 1983).

2. "Rarefied gas flow and force on a body: Hydrodynamic description of slightly rarefied gas flow," Seminar, Department of Fluid Mechanics, Institute of Fundamental Technological Research, Polish Academy of Sciences, Warsaw, Poland (September 9, 1985).

3. "Numerical analysis of rarefied gas flows by finite-difference method," Invited Lecture (40min), *The 16th International Symposium on Rarefied Gas Dynamics*, Pasadena, USA (July 10–16, 1988).

4. "Numerical analysis of rarefied gas flows," Seminar, Dipartimento di Matematica, Università di Bologna, Bologna, Italy (October 7, 1988).

5. "Numerical analysis of a nonlinear half-space boundary-value problem in kinetic theory of gases," Seminar, Department of Mathematics, Chalmers University of Technology and University of Göteborg, Göteborg, Sweden (July 2, 1990).

6. "Equation and boundary condition for gas flows with strong evaporation and condensation," Séminaire de Mécanique Théorique, Laboratoire de Modélisation en Mécanique, Université Pierre et Marie Curie, Paris, France (April 12, 1991).

7. "Drag acting on a spherical particle in a slow flow of a rarefied gas," Seminar, Laboratoire d'Aerothermique, CNRS, Meudon, France (April 18, 1991).

8. "Some recent results in kinetic theory of gases," Seminar, Dipartimento di Matematica, Università di Parma, Parma, Italy (September 7, 1993).

9. "On the inverted temperature gradient in the two-surface problem of evaporation and condensation," Seminar, Dipartimento di Matematica, Politecnico di Milano, Milano, Italy (September 14, 1993).

10. "Numerical investigation of classification of solution to a half-space boundary-value problem arising in kinetic theory of gases," Invited Lecture (50min), *Workshop on Mathematical Methods in Fluid Dynamics: Continuous and Molecular Fluids*, Dipartimento di Matematica, Politecnico di Torino, Torino, Italy (September 16–17, 1993).

11. "Derivation of fluid-dynamic equation and boundary condition for gas flows with strong evaporation or condensation on the basis of kinetic theory," Seminar, Dipartimento di Matematica, Università di Ancona, Ancona, Italy (September 22, 1993).

12. "Rarefied gas flow around a sphere: Numerical analysis of the linearized Boltzmann equation for rigid-sphere molecules," Seminar, Department of Mathematics, Chalmers University of Technology and University of Göteborg, Göteborg, Sweden (September 30, 1993).

13. "Rarefied gas flows induced by temperature fields," Séminaire Interne de Mécanique des Fluides, Laboratoire de Modélisation en Mécanique, Université Pierre et Marie Curie, Paris, France (November 22, 1994).

14. "Numerical analysis of thermal convection in a rarefied gas," Séminaire de Mécanique Théorique, Laboratoire de Modélisation en Mécanique, Université Pierre et Marie Curie, Paris, France (October 13, 1995).

15. "Thermal convection in a rarefied gas," Seminar, Mécanique Fondamentale et Appliquée, Faculté des Sciences et Techniques, Université Aix-Marseille III, Marseille, France (October 19, 1995).

16. "One-way flow of a rarefied gas induced in a channel with a periodic temperature distribution," Seminar, Huygens Laboratory, Leiden University, Leiden, The Netherlands (April 24, 1996).

17. "Inappropriateness of heat-conduction equation for description of a temperature field in a stationary gas in continuum limit," Seminar, Department of Mathematics, University of Kaiserslautern, Kaiserslautern, Germany (April 26, 1996).

18. "Inappropriateness of the heat-conduction equation for description of a temperature field of a stationary gas in the continuum limit: Examination based on kinetic theory," Seminar, Laboratorium voor Warmteen Stromingsleer, University of Twente, Enschede, The Netherlands (May 3, 1996).

19. "Rarefied gas flows induced by a temperature field: New types of convection in the absence of external force," Seminar, Department of Mathematics, Chalmers University of Technology and University of Göteborg, Göteborg, Sweden (May 9, 1996).

20. "Thermally induced flows of a rarefied gas: New types of convection in the absence of gravity," Applied Mechanics Seminar, Department of Mechanical Engineering, Yale University, New Haven, USA (November 20, 1996).

21. "Thermal convection of a rarefied gas in the absence of an external force," Seminar, DLR Institut für Strömungsmechanik, Göttingen, Germany (March 7, 1997).

22. "Vapor flows condensing on a plane condensed phase: A half-space boundary-value problem in kinetic theory," Seminar, Centre de Mathématiques et de Leurs Applications (CMLA), ENS Cachan, Cachan, France (March 13, 1997).

23. "Kinetic theory analysis of vapor flows condensing on a plane condensed phase in the presence of a noncondensable gas," Seminar, Laboratoire de Modélisation en Mécanique, Université Pierre et Marie Curie, Paris, France (March 14, 1997).

24. "Thermally induced flows of a rarefied gas: New types of convection in absence of gravity," Séminaire de Dynamique des Fluides, Laboratoire d'Hydrodynamique, École Polytechnique, Palaiseau, France (March 19, 1997).

25. "High-speed vapor flows condensing on a plane condensed phase in the presence of a noncondensable gas," Seminar, Laboratoire de Modélisation en Mécanique et Thermodynamique, Faculté des Sciences et Techniques, Université Aix-Marseille III, Marseille, France (March 21, 1997).

26. "A study on vapor flows condensing on a plane condensed phase on the basis of kinetic theory," Seminar, Department of Mechanics, The Royal Institute of Technology, Stockholm, Sweden (June 18, 1997).

27. "Finite-difference analysis of kinetic equations and the discontinuity in the velocity distribution function," Invited Lecture (50min), *WIAS-Workshop on Numerical Methods for Kinetic Equations*, Weierstrass Institute for Applied Analysis and Stochastics (WIAS), Berlin, Germany (September 1–5, 1997).

28. "Vapor flows caused by evaporation and condensation on two parallel plane surfaces: Effect of the presence of a noncondensable gas," Seminar, Department of Mathematics, University of Kaiserslautern, Kaiserslautern, Germany (September 10, 1997).

29. "Behavior of a vapor-gas mixture between two parallel plane condensed phases in the continuum limit," Seminar, Department of Mathematics, University of Nice, Nice, France (January 29, 1998).

30. "The behavior of a vapor-gas mixture in the continuum limit in the light of kinetic theory," Seminar, Département de Génie Mathématique et Modélisation, Institut National des Sciences Appliquées (INSA) de Toulouse, Toulouse, France (December 17, 1998).

31. "Continuum limit of a binary gas mixture according to kinetic theory," Seminar, Dipartimento di Matematica Pura ed Applicata, Università di L'Aquila, L'Aquila, Italy (March 1, 1999).

32. "Vapor flows caused by evaporation and condensation: Effect of the presence of a noncondensable gas," Seminar, Dipartimento di Meccanica e Aeronautica, Università di Roma "La Sapienza", Roma, Italy (March 3, 1999).

33. "Continuum limit of a binary gas mixture according to kinetic theory," Seminar, Dipartimento di Matematica, Politecnico di Milano, Milano, Italy (March 8, 1999).

34. "Fluid-dynamic limit of a vapor-gas mixture in the light of kinetic theory," Seminar, Dipartimento di Matematica, Università di Parma, Parma, Italy (March 11, 1999).

35. "Some kinetic effects caused by a sharp edge in a gas," Seminar, Department of Mathematics, Chalmers University of Technology and University of Göteborg, Göteborg, Sweden (May 10, 1999).

36. "Fluid-dynamic limit of a vapor-gas mixture according to kinetic theory," Seminar, Department of Mathematics, Luleå University of Technology, Luleå, Sweden (May 19, 1999).

37. "Some kinetic effects caused by a sharp edge in a gas," Seminar, Department of Mechanics, The Royal Institute of Technology, Stockholm, Sweden (May 26, 1999).

38. "Fluid-dynamic limit and the ghost effect for a vapor-gas mixture according to kinetic theory," Seminar, Dipartimento di Matematica, Università di Catania, Catania, Italy (September 20, 1999).

39. "The ghost effect for a vapor-gas mixture in the continuum limit: Asymptotic analysis based on kinetic theory," Seminar, Department of Applied Physics, Eindhoven University of Technology, Eindhoven, The Netherlands (December 7, 1999).

40. "The behavior of a vapor-gas mixture in the continuum limit: Asymptotic analysis based on the Boltzmann equation," Invited Lecture (30min), *The 22nd International Symposium on Rarefied Gas Dynamics*, Sydney, Australia (July 9–14, 2000).

41. "A fluid-dynamic limit for binary gas mixtures," Seminar, Département de Mathématiques et Applications, École Normale Supérieure, Paris, France (December 5, 2000).

42. "The behavior of a vapor-gas mixture in the continuum limit: Asymptotic analysis based on kinetic theory," Seminar, Laboratoire de Modélisation en Mécanique, Université Pierre et Marie Curie, Paris, France (December 12, 2000).

43. "Dynamics of rarefied gas flows: Asymptotic and numerical analyses of the Boltzmann equation," Invited Lecture on Microfluidics (60min), *The 39th AIAA Aerospace Sciences Meeting and Exhibit*, Reno, USA (January 8–11, 2001).

44. "A fluid-dynamic limit of a vapor-gas mixture according to kinetic theory," Invited Lecture (40min), *Workshop on Nonlinear Analysis*, Institute of Mathematics, Academia Sinica, Taipei, Taiwan (March 24–25, 2001).

45. "Continuum limit for vapor flows with evaporation and condensation: Effect of the presence of a noncondensable gas," Colloquium, Department of Mathematics, National Taiwan University, Taipei, Taiwan (March 26, 2001).

46. "Dynamics of rarefied gas flows: Asymptotic and numerical analyses of the Boltzmann equation," Joint Seminar of Academia Sinica and National Taiwan University on Topics in Kinetic Theory, Institute of Mathematics, Academia Sinica, Taipei, Taiwan (March 30 & April 6, 2001).

47. "Continuum limit for vapor flows with evaporation and condensation: Effect of infinitesimal amount of a noncondensable gas," Invited Lecture (30min), Oberwolfach Workshop, *Asymptotic and Numerical Methods for Kinetic Equations*, Mathematisches Forschungsinstitut Oberwolfach, Oberwolfach-Walke, Germany (April 15–21, 2001).

48. "Dynamics of rarefied gas flows: Asymptotic and numerical analyses of the Boltzmann equation," Seminar, Department of Mathematics, Technical University of Darmstadt, Darmstadt, Germany (May 11, 2001).

49. "A rarefied gas flow between two parallel plates driven by a uniform external force," Invited Lecture (30min), CECAM Workshop, *Computational Kinetic Theory: Mesoscale Applications*, Centre Européen de Calcul Atomique et Moléculaire (CECAM), Lyon, France (May 28–31, 2001).

50. "On numerics and asymptotics in kinetic theory," Invited Lecture (50min$\times$2), *TMR Summer Meeting on Kinetic Theory*, Anogia, Crete, Greece (June 16–22, 2001).

51. "Some kinetic effects caused by discontinuous boundary data: Numerical analysis of the BGK kinetic model," Seminar, Mathématiques Appliquées de Bordeaux, Université Bordeaux 1, Bordeaux, France (September 20, 2001).

52. "Fluid-dynamic limit for vapor flows with evaporation and condensation: Effect of a small amount of a non-condensable gas," Invited Lecture (45min), Conference in

Honor of Claude Bardos, *Hydrodynamic Limits: Results & Perspectives*, Institut Henri Poincaré, Paris, France (September 24–28, 2001).

53. "Dynamics of rarefied gas flows: Asymptotic and numerical analyses of the Boltzmann equation," Seminar, Erwin Schrödinger Institute, Vienna, Austria (November 28, 2001).

54. "Finite-difference method for the Boltzmann equation for a binary mixture of hard-sphere gases," Invited Lecture (50min), TMR-Workshop, *Numerical and Asymptotic Methods for Kinetic Equations*, University of Saarland, Saarbrücken, Germany (November 29–December 1, 2001).

55. "Finite-difference method for the Boltzmann equation for a binary mixture of hard-sphere gases," Seminar, Institute of Applied Mathematics and Mechanics, Warsaw University, Warsaw, Poland (January 30, 2002).

56. "Vapor flows with evaporation and condensation in the continuum limit: Effect of a trace of noncondensable gas," Seminar, Department of Mathematics, Chalmers University of Technology and University of Göteborg, Göteborg, Sweden (February 7, 2002).

57. "Vapor flows with evaporation and condensation in the continuum limit: Effect of a trace of noncondensable gas," Seminar, Department of Mathematics, Karlstad University, Karlstad, Sweden (February 19, 2002).

58. "Dynamics of rarefied gas flows: Asymptotic and numerical analyses of the Boltzmann equation," Seminar, Department of Mechanics, The Royal Institute of Technology, Stockholm, Sweden (March 5, 2002).

59. "Vapor flows with evaporation and condensation in the continuum limit: Effect of a trace of noncondensable gas," Seminar, Department of Applied Mechanics, Thermo- and Fluid Dynamics, Norwegian University of Science and Technology, Trondheim, Norway (March 11, 2002).

60. "Half-space problem of condensing vapor flows in the presence of a noncondensable gas," Invited Lecture (40min), *The 2nd Workshop on Kinetic Theory and Applications*, Karlstad University, Karlstad, Sweden (September 1–3, 2002).

61. "Modern aspects and applications of kinetic theory of gases," Colloquium, Department of Mathematics, Chalmers University of Technology and University of Göteborg, Göteborg, Sweden (September 9, 2002).

62. "Numerical analysis of the Boltzmann equation for a binary gas mixture," Invited Lecture (50min), *XX School of Computational Mathematics: Computational Aspects in Kinetic Models*, Piano di Sorrento, Napoli, Italy (September 22–28, 2002).

63. "Molecular gas dynamics and its fluid-dynamic aspects," Thermo and Fluid Dynamics/Turbulence Seminar, Department of Mechanical Engineering, Chalmers University of Technology, Göteborg, Sweden (September 27, 2002).

64. "Monte Carlo simulation of rarefied gas flows between two coaxial circular cylinders," Invited Lecture (35min), *Workshop on Direct Simulation Monte Carlo: The Past 40 Years and the Future*, Politecnico di Milano, Milano, Italy (June 2–5, 2003).

65. "Monte Carlo simulation of rarefied gas flows between two coaxial circular cylinders," Seminar, Department of Mechanics, The Royal Institute of Technology, Stockholm, Sweden (June 10, 2003).

66. "Fluid-dynamic system for a mixture of a vapor and a noncondensable gas," Invited Lecture (35min), *The 3rd Workshop on Kinetic Theory and Applications*, Karlstad University, Karlstad, Sweden (June 15–17, 2003).

67. "Rarefied gas flows between two coaxial circular cylinders," Seminar, MIP, Université Paul Sabatier, Toulouse, France (December 2, 2003).

68. "Fluid-dynamic limit of vapor flows with evaporation and condensation: Effect of a trace of noncondensable gas," Seminar, Dipartimento di Matematica, Università di Roma "La Sapienza", Roma, Italy (February 25, 2004).

69. "Fluid-dynamic limit of vapor flows with evaporation and condensation," Seminar, Dipartimento di Matematica e Informatica, Università di Catania, Catania, Italy (March 4, 2004).

70. "Rarefied gas flows between coaxial circular cylinders," Seminar, Dipartimento di Meccanica e Aeronautica, Università di Roma "La Sapienza", Roma, Italy (May 27, 2004).

71. "Linear stability of the cylindrical Couette flow of a rarefied gas," Invited Lecture (50min), *Modelling and Numerics of Kinetic Dissipative Systems: Cooling, Clusters, and Pattern Formation*, Lipari, Italy (May 31–June 4, 2004).

72. "Fluid-dynamic limit of vapor flows with evaporation and condensation: Effect of a trace of noncondensable gas," Seminar, *Summer School: Methods and Models of Kinetic Theory*, Porto Ercole, Grosseto, Italy (June 7–12, 2004).

73. "Linear stability of the cylindrical Couette flow of a rarefied gas," Seminar, Mathématiques Appliquées de Bordeaux, Université Bordeaux 1, Bordeaux, France (June 28, 2004).

74. "Fluid-dynamic limit of vapor flows with evaporation and condensation: Effect of a trace of noncondensable gas," Seminar, MIP, Université Paul Sabatier, Toulouse, France (July 8, 2004).

75. "On the half-space problem for condensing vapor flows," Invited Lecture (45min), *Advances in Mathematical Physics: A Congress in Honour of Carlo Cercignani for His 65th Birthday*, Montecatini Terme, Italy (September 9–11, 2004).

76. "Some considerations on condensing vapor flows in the presence of a noncondensable gas," Invited Lecture (45min), *Taiwan-Japan Joint Conference on Nonlinear Analysis and Applied Mathematics*, Institute of Mathematics, Academia Sinica, Taipei, Taiwan (November 5–9, 2004).

77. "Fluid-dynamic limit of vapor flows with evaporation and condensation: Effect of a trace of noncondensable gas," Seminar, Departamento de Física, Universidade Federal do Paraná, Curitiba, Brazil (March 4, 2005).

78. "Dynamics of rarefied gas flows: Asymptotic and numerical methods," Seminar, Department of Mechanical Engineering, Universidade Federal do Rio Grande do Sul, Porto Alegre, Brazil (March 15, 2005).

79. "Dynamics of rarefied gas flows: Asymptotic and numerical methods," Seminar, Departamento de Física, Universidade Federal do Paraná, Curitiba, Brazil (March 17, 2005).

80. "Cylindrical Couette flow of a vapor-gas mixture: A ghost effect in the fluid-dynamic limit," Seminar, Department of Mathematics, University of Vienna, Austria (May 31, 2005).

81. "Cylindrical Couette flow of a vapor-gas mixture: A ghost effect in the fluid-dynamic limit," Seminar, Mathématiques Appliquées de Bordeaux, Université Bordeaux 1, Bordeaux, France (June 9, 2005).

82. "Cylindrical Couette flow of a vapor-gas mixture: A ghost effect in the fluid-dynamic limit," Invited Lecture (35min), *The 4th Workshop on Kinetic Theory and Applications*, Karlstad University, Karlstad, Sweden (June 12–14, 2005).

83. "Anomalous fluid-dynamic limits for a vapor-gas mixture," Keynote Lecture (40min), *The 14th International Conference on Discrete Simulation of Fluid Dynamics in Complex Systems*, Kyoto University, Kyoto, Japan (August 22–26, 2005).

84. "Anomalous fluid-dynamic limits for vapor-gas mixture," Seminar, Dipartimento di Matematica, Università di Roma "La Sapienza", Roma, Italy (September 21, 2005).

85. "Dynamics of rarefied gas flows: Asymptotic and numerical methods," Seminar, Dipartimento di Matematica, Università di Parma, Parma, Italy (September 26, 2005).

86. "Cylindrical Couette flow of a vapor-gas mixture: A ghost effect in the fluid-dynamic limit," Seminar, Dipartimento di Matematica Pura ed Applicata, Università di L'Aquila, L'Aquila, Italy (September 29, 2005).

87. "Anomalous fluid-dynamic limits for the Boltzmann equation," Seminar, Institute of Mechanics, Chinese Academy of Sciences, Beijing, China (October 25, 2005).

88. "Cylindrical Couette flow of a vapor-gas mixture: A ghost effect in the fluid-dynamic limit," Seminar, Department of Mathematics, Capital Normal University, Beijing, China (October 27, 2005).

89. "Anomalous fluid-dynamic limits in kinetic theory of gases," Seminar, Institute of Mathematics, Chinese Academy of Sciences, Beijing, China (October 28, 2005).

90. "Cylindrical Couette flow of a vapor-gas mixture: A ghost effect in the continuum limit," Invited lecture (60min), *International Conference on Nonlinear Analysis: Prospects of Mathematical Sciences*, Institute of Mathematics, Academia Sinica, Taipei, Taiwan (December 17–20, 2005).

91. "Fluid-dynamic models for thermally driven gas flows in microscales," Seminar, *Summer School: Methods and Models of Kinetic Theory*, Porto Ercole, Grosseto, Italy (June 5–10, 2006).

92. "Fluid-dynamic limit for vapor flows with evaporation and condensation," Invited Lecture (50min), *Conference/School: Boltzmann Equation and Fluidodynamic Limits*, Scuola Internazionale Superiore di Studi Avanzati (SISSA), Trieste, Italy (June 12–17, 2006).

93. "Diffusion Models for Knudsen-type pumps," Invited Lecture (30min), *Conference on Nonlinear PDEs: Homogenization and Kinetic Equations*, Kreiskyforum, Vienna, Austria (June 26–30, 2006).

94. "Fluid-dynamic models for gas flows in microscales," Invited Lecture (40min), *The 25th International Symposium on Rarefied Gas Dynamics*, St. Petersburg, Russia (July 21–28, 2006).

95. "A fluid-dynamic model for microscale gas flows driven by temperature," Invited Lecture (40min), *International Conference on Nonlinear Evolutionary Partial Differential Equations*, Xining, Qinghai, China (July 30–August 3, 2006).

96. "Some considerations on the Knudsen pump," Seminar, Department of Mathematical Sciences, Chalmers University of Technology and University of Göteborg, Göteborg, Sweden (September 1, 2006).

97. "Dynamics of rarefied gas flows: Asymptotic and numerical methods," Invited Lecture (60min), *Special Semester on Quantum Kinetic Theory*, Beijing International Center for Mathematical Research, Peking University, Beijing, China (November 22, 2006).

98. "Cylindrical Couette flow of a vapor-gas mixture: Ghost effect and bifurcation in the continuum limit," Seminar, Department of Mathematical Sciences, Tsinghua University, Beijing, China (November 23, 2006).

99. "Fluid-dynamic models for gas flows in microscales," Seminar, Institute of Mechanics, Chinese Academy of Sciences, Beijing, China (November 24, 2006).

100. "Asymptotic and numerical methods in kinetic theory of gases," Seminar, Department of Mathematics, Capital Normal University, Beijing, China (November 28, 2006).

101. 1. "Fluid-dynamic models for gas flows in microscales," and 2. "Cylindrical Couette flow of a vapor-gas mixture: Ghost effect and bifurcation in the continuum limit," Invited Lecture (60min×2), *Special Semester on Quantum Kinetic Theory*, Beijing International Center for Mathematical Research, Peking University, Beijing, China (November 29, 2006).

102. "Numerical analysis for rarefied gas flows," Seminar, Institute of Applied Physics and Computational Mathematics, Beijing, China (November 30, 2006).

103. "Dynamics of rarefied and microscale gas flows," MINNHOKEE Memorial Lecture 1 (60min), Department of Mathematical Sciences, Seoul National University, Seoul, Korea (January 30, 2007).

104. "Fluid-dynamic models for gas flows in microscales," MINNHOKEE Memorial Lecture 2 (50min), Department of Mathematical Sciences, Seoul National University, Seoul, Korea (January 31, 2007).

105. "Ghost effect and bifurcation arising in a vapor-gas mixture," MINNHOKEE Memorial Lecture 3 (50min), Department of Mathematical Sciences, Seoul National University, Seoul, Korea (January 31, 2007).

106. "A fluid-dynamic limit for a vapor-gas mixture," Invited Lecture (55min), *The 3rd Workshop on Numerical and Asymptotic Methods for Kinetic Equations*, University of Saarland, Saarbrücken, Germany (February 12–14, 2007).

107. "Some considerations on the Knudsen pump," Seminar, Department of Mathematics, University of Vienna, Austria (March 8, 2007).

108. "Fluid-dynamic models for gas flows in a thin channel," Nonlinear Analysis Seminar, Institute of Mathematics, Academia Sinica, Taipei, Taiwan (March 19, 2007).

109. "A diffusion model for rarefied gas flows in a curved channel," Invited Lecture (35min), *The 5th Workshop on Kinetic Theory and Applications*, Karlstad University, Karlstad, Sweden (June 10–12, 2007).

110. "A diffusion model for rarefied gas flows in a curved channel," Invited Lecture (50min), *FRG Meeting & Workshop on Kinetic Theory and Conservation Laws*, Stanford University, Stanford, USA (June 26–July 9, 2007).

111. "Taylor–Couette flows of a vapor-gas mixture: Bifurcation in the near continuum regime," Invited Lecture (40min), *Direct Simulation Monte Carlo: Theory, Methods & Applications*, Santa Fe, USA (September 30–October 3, 2007).

112. "A diffusion model for rarefied gas flows in a curved channel," ICES Seminar, Institute for Computational Engineering and Sciences, University of Texas at Austin, Austin, USA (October 4, 2007).

113. "Taylor–Couette flows of a vapor-gas mixture: Bifurcation in the near continuum regime," Seminar, Institut de Mathématiques de Toulouse, Equipe MIP, Université Paul Sabatier, Toulouse, France (November 19, 2007).

114. "A diffusion model for rarefied gas flows in a curved channel," Seminar, Mathématiques Appliquées de Bordeaux, Université Bordeaux 1, Bordeaux, France (November 29, 2007).

115. "Fluid models and simulations of internal rarefied gas flows (Part I and Part II)," Course (75min×2), *Summer School: Methods and Models of Kinetic Theory*, Porto Ercole, Grosseto, Italy (June 9–14, 2008).

116. "Fluid dynamics for gaseous mixtures derived from kinetic theory," Harold Grad Lecture (60min), *The 26th International Symposium on Rarefied Gas Dynamics*, Kyoto, Japan (July 20–25, 2008).

117. "Molecular gas dynamics and the Boltzmann equation," Mini-Course (90min×4), *The 3rd International Conference on the Boltzmann Equation and Related Topics*, Wuhan, China (October 7–10, 2008).

118. "Taylor–Couette flows of a vapor-gas mixture: Bifurcation in the near continuum regime," Seminar, Department of Mathematics, Wuhan University, Wuhan, China (October 8, 2008).

119. "Fluid dynamics for gaseous mixtures derived from kinetic theory," Invited Lecture (40min), *The 3rd International Conference on the Boltzmann Equation and Related Topics*, Wuhan, China (October 11–13, 2008).

120. "Slow flows of a vapor-gas mixture with large density and temperature variations in the near-continuum regime," Invited Lecture (60min), Oberwolfach Mini-Workshop, *Numerics for Kinetic Equations*, Mathematisches Forschungsinstitut Oberwolfach, Oberwolfach-Walke, Germany (November 16–22, 2008).

121. "Diffusion approximation for rarefied gas flows in a curved channel," Invited Lecture (50min), *International Conference on Conservation Laws and Kinetic Equations 2008*, Shanghai, China (December 12–15, 2008).

122. "Taylor–Couette flows of a vapor-gas mixture: Bifurcation in the near continuum regime," Seminar, Departamento de Física, Universidad de Extremadura, Badajoz, Spain (January 29, 2009).

123. "On a kinetic approach for nanoflows and surface diffusion," Invited Lecture (45min), Conference *Kinetic Equations and Applications*, Centre International de Rencontres Mathématique (CIRM), Marseille, Fracce (February 2–6, 2009).

124. "Some considerations on collisionless gases," Invited Lecture (50min), *2009 Workshop on Kinetic Theory*, Institute of Mathematics, Academia Sinica, Taipei, Taiwan (March 21–23, 2009).

125. "Taylor–Couette flows of a vapor-gas mixture: Bifurcation in the near continuum regime," Aerothermodynamics and Fluid Mechanics Seminar, Department of Aerospace Engineering and Engineering Mechanics, University of Texas at Austin, Austin, USA (April 2, 2009).

126. "Some considerations on free-molecular gases," Math/ICES Center of Numerical Analysis Seminar, Institute for Computational Engineering and Sciences, University of Texas at Austin, Austin, USA (April 9, 2009).

127. "Fluid dynamics for a vapor-gas mixture derived from kinetic theory," Invited Lecture (50min), *IPAM Workshop II – The Boltzmann Equation: DiPerna–Lions Plus 20 Years*, Institute for Pure and Applied Mathematics, University of California, Los Angeles, Los Angeles, USA (April 15–17, 2009).

128. "Fluid dynamics for a vapor-gas mixture derived from kinetic theory," Invited Lecture (30min), *Workshop on Theory and Applications of Classical and Quantum Kinetic Theory*, Banff International Research Station, Banff, Canada (June 22–26, 2009).

129. "Approach to steady motion of a plate moving in a collision less gas under a constant external force," Invited Lecture (50min), *Workshop and Summer School on Topics in Kinetic Theory*, University of Victoria, Victoria, Canada (June 29–July 3, 2009).

130. "Kinetic theory of gases and its applications," Basic course (50min $\times$ 12), *The 34th Summer School of Mathematical Physics*, Ravello, Italy (September 14–26, 2009).

131. "Diffusion-type models for gas flows in microchannels," Seminar, Institut Jean le Rond d'Alembert, Université Pierre et Marie Curie, Paris, France (November 13, 2009).

132. "Some remarks on collisionless gases," Invited Lecture (45min), *The 4th Workshop on Theory and Numerics of Kinetic Equations*, University of Saarland, Saarbrücken, Germany (November 16–18, 2009).

133. "Fluid dynamics for a vapor-gas mixture derived from kinetic theory," Seminar, Laboratoire d'Hydrodynamique (Ladhyx), École Polytechnique, Palaiseau, France (November 26, 2009).

134. "Some remarks on collisionless gases," Invited Lecture (40min), *The 7th East Asia Conference on PDEs*, The Chinese University of Hong Kong and City University of Hong Kong, Hong Kong (December 14–18, 2009).

135. "Fluid-dynamic systems for a vapor-gas mixture derived from kinetic theory and their application," Seminar, Centre de Mathématiques et de Leurs Applications (CMLA), École Normale Supérieure de Cachan, Cachan, France (February 1, 2010).

136. "Diffusion-type models for gas flows in microchannels," Seminar, Institut Universitaire de System Thermique Industriale (IUSTI), Université de Provence, Marseille, France (February 8, 2010).

137. "Asymptotics of kinetic equations and fluid-dynamic limits," Plasmax Seminar, Saint Lary, France (March 16, 2010).

138. "Diffusion approximation for gas flows in a curved micro channel," Seminar, Institut Clément Ader, Institut National des Sciences Appliquées (INSA) de Toulouse, Toulouse, France (March 24, 2010).

139. "Asymptotics of kinetic equations and fluid-dynamic limits," Seminar, Laboratoire Plasma et Conversion d'Energie (LAPLACE), Toulouse, France (April 7, 2010).

140. "Relaxation of a Knudsen gas to equilibrium caused by interaction with vessel wall," Seminar, *Summer School: Methods and Models of Kinetic Theory*, Porto Ercole, Grosseto, Italy (June 14–19, 2010).

141. "Stokes fluid dynamics for a vapor-gas mixture derived from kinetic theory," Invited Lecture (45min), *The 5th Pacific Rim Conference on Mathematics*, Stanford University, Stanford, USA (June 28–July 2, 2010).

142. "Numerical study of some decay problems of a collisionless gas," Invited Lecture (50min), *Workshop on Kinetic and Fluids*, Beijing International Center for Mathematical Research, Peking University, Beijing, China (July 26–30, 2010).

143. "Some decay problems of a collisionless gas: A numerical study," Seminar, Department of Mathematical Sciences, Chalmers University of Technology and University of Göteborg, Göteborg, Sweden (August 31, 2010).

144. "Some decay problems of a collisionless gas: A numerical study," Invited Lecture (60min), *Workshop: Fluid-Kinetic Modelling in Biology, Physics & Engineering*, Isaac Newton Institute for Mathematical Sciences, Cambridge University, Cambridge, UK (September 6–10, 2010).

145. "Stokes fluid dynamics for a vapor-gas mixture derived from kinetic theory," Invited Lecture (45min), *Workshop on Kinetic and Related Models*, Center for Nonlinear Studies, Department of Mathematics, Northwest University, Xi'an, China (October 16–18, 2010).

146. "Some basic problems of a collisionless gas: A numerical study," Invited Lecture (40min), *NIMS Thematic Program Workshop on Conservation Laws, Plasma and Related Fields*, Department of Mathematical Sciences, Seoul National University, Korea (October 21–23, 2010).

147. "On the speed of approach to equilibrium for a collisionless gas," Invited Lecture (45min), *International Conference on Nonlinear Partial Differential Equations: Mathematical Theory, Computation, and Applications*, Institute for Mathematical Sciences, National University of Singapore, Singapore (November 29–December 3, 2010).

148. "On the asymptotics of the Boltzmann equation and fluid-dynamic limits," Invited Lecture (40min), *International Conference on Nonlinear Evolutionary Partial Differential Equations: Theories and Applications*, Department of Mathematics, Shanghai Jiao Tong University, Shanghai, China (January 10–15, 2011).

149. "Stokes fluid dynamics for a vapor-gas mixture derived from kinetic theory," Séminaire du Laboratoire Jacques-Louis Lions, Université Pierre et Marie Curie, Paris, France (February 4, 2011).

150. "Some remarks on collisionless gases," Invited Lecture (45min), Conference in Memory of Carlo Cercignani. *Boltzmann equation: Mathematics, Modeling and Simulations*, Institut Henri Poincaré, Paris, France (February 9–11, 2011).

151. "Decay of an oscillating disk in a collision-less gas: A long-memory effect," Invited Lecture (40min), *The 2011 Annual Kinetic FRG Meeting: Kinetic Description of Multiscale Phenomena*, Department of Mathematics, University of Wisconsin–Madison, Madison, USA (May 23–27, 2011).

152. "Decay of an oscillating disk in a gas: Case of a collision-less gas and a special Lorentz gas," Applied Mathematics Seminar, Department of Mathematics, Stanford University, Stanford, USA (June 1, 2011).

153. "Boundary-value problems of the Boltzmann equation: Asymptotic and numerical analyses," Intensive Lecture Series (60min $\times$ 3), *Conference on Kinetic Theory and Related Fields*, Department of Mathematics, Pohang University of Science and Technology, Pohang, Korea (June 20–21, 2011).

154. "Decay of an oscillating disk in a gas: Case of a collision-less gas and a special Lorentz gas," Invited Lecture (50min), *Conference on Kinetic Theory and Related Fields*, Department of Mathematics, Pohang University of Science and Technology, Pohang, Korea (June 22–24, 2011).

155. "Moving boundary problems in collisionless kinetic theory," Invited Lecture (40min), *The 8th International Conference for Mesoscopic Methods in Engineering and Science (ICMMES)*, Institut National des Sciences Appliquées (INSA) de Lyon, Lyon, France (July 4–8, 2011).

156. "Some considerations on radiometric effect," Seminar, Dipartimento di Matematica, Politecnico di Milano, Milano, Italy (September 1, 2011).

157. "Some considerations on radiometric effect," Invited Lecture (40min), *Non Linear Hyperbolic Systems of Balance Laws in Extended Thermodynamics and Kinetic Theory*, Cortona, Italy (September 4–10, 2011).

158. "Some considerations on radiometric effects: Rarefied gas flows induced by temperature fields," Seminar, Department of Applied Mathematics and Theoretical Physics (DAMTP), Cambridge University, Cambridge, UK (October 14, 2011).

159. "Some considerations on radiometric effects," Invited Lecture (60min), *Workshop: Novel Applications of Kinetic Theory and Computations*, Institute for Computational and Experimental Research in Mathematics (ICERM), Brown University, Providence, USA (October 17–21, 2011).

160. "Asymptotic methods for rarefied gas flows based on the Boltzmann equation," Lecture series (90min $\times$ 3), Department of Mechanical Engineering. Massachusetts Institute of Technology, Boston, USA (October 27, November 1 & 3, 2011).

161. "Asymptotic analysis for boundary-value problems of the Boltzmann equation," Tutorial talk (120min), Institute for Computational and Experimental Research in Mathematics (ICERM), Brown University, Providence, USA (November 4, 2011).

162. "Decay of a linear pendulum in a rarefied gas," Invited Lecture (50min), *Spring School: Kinetic Theory and Fluid Mechanics*, Université Claude Bernard (Lyon 1), Lyon, France (March 26–30, 2012).

163. "Some considerations on radiometric effects: Rarefied gas flows induced by temperature fields," Seminar, Dipartimento di Ingegneria Meccanica e Aerospaziale, Università di Roma "La Sapienza", Roma, Italy (May 31, 2012).

164. "Some considerations on radiometric effects: Rarefied gas flows induced by temperature fields," Seminar, Dipartimento di Fisica, Università di Roma "Tor Vergata", Roma, Italy (June 1, 2012)

165. "Singular and moving boundary problems in kinetic theory. Part 1: Singular boundary, Part 2: Moving boundary," Seminars (45min $\times$ 2), *Summer School: Methods and Models of Kinetic Theory*, Porto Ercole, Grosseto, Italy (June 4–9, 2012).

166. "Moving boundary problems in kinetic theory," Seminar, Department of Mathematical Sciences, Chalmers University of Technology and University of Göteborg, Göteborg, Sweden (August 30, 2012).

167. "Moving boundary problems in kinetic theory," Seminar, Applied Mathematical and Computational Science, King Abdullah University of Science and Technology (KAUST), Thuwal, Saudi Arabia (October 20, 2012).

168. "Moving boundary problems in kinetic theory of gases," Invited Lecture (45min), *Convegno Internazionale: La geometria degli atomi e delle molecole. La Meccanica negli studi di Carlo Cercignani*, Istituto Lombardo, Milano, Italy (November 22, 2012).

169. "Diffusion approximation for gas flows in a curved micro channel," Seminar, Dipartimento di Ingegneria Aerospaziale, Politecnico di Milano, Milano, Italy (November 23, 2012).

170. "Kinetic theory approach to microscale gas flows," Plenary Lecture (40min), *The 3rd European Conference on Microfluidics*, EMBL Advanced Training Centre, Heidelberg, Germany (December 3–5, 2012).

171. "Moving boundary problems in kinetic theory of gases," Plenary Lecture (45min), *The 8th International Conference on Computational Physics (ICCP8)*, Hong Kong Baptist University, Hong Kong (January 7–11, 2013).

172. "Moving boundary problems for a rarefied gas: Spatially one-dimensional case," Invited Lecture (50min), *Workshop: Issues in Solving the Boltzmann Equation for Aerospace Applications*, Institute for Computational and Experimental Research in Mathematics (ICERM), Brown University, Providence, USA (June 3–7, 2013).

173. "Some moving boundary problems in kinetic theory of gases: Spatially one-dimensional problems," Invited Lecture (30min), *The 17th International Conference on Waves and Stability in Continuous Media (WASCOM)*, Levico Terme (Trento), Italy (June 17–21, 2013).

174. "Decay of a linear pendulum in a rarefied gas," Invited Lecture (30min), *The 2nd Pacific Rim Mathematical Association Congress*, Shanghai Jiao Tong University, China (June 24–28, 2013).

175. "Rarefied gas flows between two coaxial rotating cylinders at small Knudsen numbers: DSMC versus slip flow theory," Seminar, Department of Mathematical Sciences, Chalmers University of Technology and University of Göteborg, Göteborg, Sweden (August 29, 2013).

176. "Rarefied gas flows between two coaxial rotating cylinders at small Knudsen numbers: DSMC and slip flow theory," Seminar, Institut de Mathématiques de Bordeaux, Université Bordeaux 1, Bordeaux, France (September 4, 2013).

177. "Some recent topics in classical kinetic theory of gases," Tullio Levi-Civita Lecture (60min), Dipartimento di Matematica Guido Castelnuovo, Università di Roma "La Sapienza", Roma, Italy (October 16, 2013).

178. "Rarefied gas flows between two coaxial rotating cylinders at small Knudsen numbers: DSMC and slip flow theory," Graeme A. Bird Keynote Lecture (60min), *Direct Simulation Monte Carlo 2013: Theory, Methods and Applications*, Santa Fe, USA (October 20–23, 2013).

179. "Moving boundary problems in kinetic theory of gases: Spatially one-dimensional problems," Séminaire Laurent Schwartz: EDP et applications, Centre de Mathématiques Laurent Schwartz (CMLS), École Polytechnique, Palaiseux, France (November 19, 2013).

180. "Elementary derivation of the Boltzmann equation," Seminar (as part of the course "Physical Fluid Dynamics"), von Karman Institute for Fluid Dynamics, Rhode-St-Genèse, Belgium (November 25, 2013).

181. "Some recent topics in classical kinetic theory of gases," Seminar, Laboratoire de Physique Théorique de la Matière Condensée (LPTMC), Université Pierre et Marie Curie, Paris, France (November 28, 2013).

182. "Numerical analysis of the Taylor-vortex flow of a slightly rarefied gas," Seminar, Institute of Mathematics, Academia Sinica, Taipei, Taiwan (March 3, 2014).

183. "Some recent topics in classical kinetic theory of gases," ICES Seminar–Numerical Analysis Series, Institute for Computational Engineering and Sciences, University of Texas at Austin, Austin, USA (March 28, 2014).

184. "Decay of a linear pendulum in a collisional gas: Spatially one-dimensional case," Invited Lecture (35min), *The 6th International Workshop on Kinetic Theory and Applications*, Karlstad University, Karlstad, Sweden (May 12–14, 2014).

185. "Numerical analysis of the Taylor-vortex flow of a slightly rarefied gas," Invited Lecture (40min), *NIMS Hot Topic Wowkshop: From Mechanics to Geometry. In honor of Marshall Slemrod's 70th birthday*, Seoul National University, Seoul, Korea (May 26–29, 2014).

186. "Numerical analysis of the Taylor-vortex flow of a slightly rarefied gas," Seminar (45min), *Summer School: Methods and Models of Kinetic Theory*, Porto Ercole, Grosseto, Italy (June 8–14, 2014).

187. "Decay of a linear pendulum in a collisional gas: Spatially one-dimensional case," Seminar, Institut de Mathématiques de Bordeaux, Université de Bordeaux and Bordeaux INP, Bordeaux, France (September 9, 2014).

188. "Motion of an array of plates in a rarefied gas caused by radiometric force," Applied Mathematics Seminar, Department of Mathematics and Statistics, University of Victoria, Victoria, Canada (September 30, 2014).

189. "Numerical analysis of the Taylor-vortex flow of a slightly rarefied gas," Seminar, Laboratoire J. A. Dieudonné, Université Nice-Sophia Antipolis, Nice, France (November 6, 2014).

190. "A numerical study of the Taylor-Couette problem for a vapor-gas mixture," Invited Lecture (35min), Conference *Kinetic Equations*, Centre International de Rencontres Mathématique (CIRM), Marseille, Fracce (November 10–14, 2014).

191. "Motion of an array of plates in a rarefied gas caused by radiometric force," Invited Lecture (50min), *International Conference on Nonlinear Analysis: Boundary Phenomena for Evolutionary PDE*, Institute of Mathematics, Academia Sinica (Taipei, December 20–24, 2014).

192. "Motion of an array of plates in a rarefied gas caused by radiometric force," Invited Lecture (50min), *Workshop on High Performance and Parallel Computing Methods and Algorithms for Multiphase/Complex Fluids*, Institute for Mathematical Sciences, National University of Singapore (Singapore, March 2–6, 2015).

193. "Asymptotic and numerical methods for rarefied gas flows based on kinetic theory," Tutorial Lectures (60min × 4), *Winter School on Computational and Mathematical Methods for Materials Defects and Multiphase Flows*, Institute for Mathematical Sciences, National University of Singapore (Singapore, March 9 and 10, 2015).

194. "On the steady Boltzmann and Navier–Stokes equations in the presence of an external force," Invited Lecture (45min), *The 6th Workshop on Theory and Numerics of Kinetic Equations*, University of Saarland, Saarbrücken, Germany (June 1–3, 2015).

195. "On the steady Boltzmann and Navier-Stokes equations in the presence of an external force," Invited Lecture (40min), *Workshop on Hyperbolic Conservation Laws and Related Topics (In honor of Tai-Ping Liu's 70th Birthday)*, Seoul National University, Seoul, Korea (June 22–25, 2015).

196. "Nonlinear acoustic wave propagation in a rarefied gas: Numerical analysis based on kinetic and fluid equations," Seminar, Beijing Computational Science Research Center (CSRC), Beijing, China (August 11, 2015).

197. "On the steady Boltzmann and Navier-Stokes equations in the presence of an external force," Seminar, Institute of Applied Mathematics, Academy of Mathematics and System Sciences, Chinese Academy of Sciences, Beijing, China (August 18, 2015).

198. "Motion of an array of plates in a rarefied gas caused by radiometric force," Seminar, Institute of Mechanics, Chinese Academy of Sciences, Beijing, China (August 20, 2015).

199. "Nonlinear acoustic wave propagation in a rarefied gas: Numerical analysis based on kinetic and fluid equations," Invited Lecture (40min), *International Conference on Kinetic Equations and Related Topics: In honor of Professor C. Bardos on the Occasion of His 75th Birthday*, Wuhan University, Wuhan, China (September 14–18, 2015).

200. "Nonlinear acoustic wave propagation in a rarefied gas: Numerical analysis based on kinetic and fluid equations," Seminar, Laboratoire de Physique Théorique de la Matière Condensée, Université Pierre et Marie Curie, Paris, France (October 1, 2015).

201. "Motion of an array of plates in a rarefied gas caused by radiometric force," Seminar, Laboratoire Modélisation Mathématique et Numérique, Conservatoire National des Arts et Métiers, Paris, France (October 7, 2015).

202. "Decay of a linear pendulum in a collisional gas: Spatially one-dimensional case," Seminar, Laboratoire EM2C, CentraleSupélec, Châtenay-Malabry, France (October 8, 2015).

203. "Numerical analysis of the Taylor-vortex flow of a slightly rarefied gas," Séminaire Laurent Schwartz: EDP et applications, Centre de Mathématiques Laurent Schwartz (CMLS), École Polytechnique, Palaiseux, France (October 13, 2015).

204. "Numerical analysis of the Taylor-vortex flow of a slightly rarefied gas," Seminar, Institut Jean le Rond d'Alembert, Université Pierre et Marie Curie, Paris, France (October 20, 2015).

205. "Unsteady motion of a slightly rarefied gas caused by a plate oscillating in its normal direction," Invited Lecture (50min), *International Conference on Nonlinear Analysis:*

Kinetic Theory and Related Topics, Institute of Mathematics, Academia Sinica, Taipei, Taiwan (October 30–November 3, 2015).

206. "Unsteady motion of a slightly rarefied gas caused by a plate oscillating in its normal direction," Seminar, Dipartimento di Matematica e Informatica, Università di Catania, Catania, Italy (December 3, 2015).

207. "Decay of a linear oscillator in a rarefied gas: Spatially one-dimensional case," Invited Lecture (50min), *Statistical Mechanics and Evolution Equations: A Workshop in Honor of Carlo Marchioro on Occasion of his 70th Birthday*, Dipartimento di Matematica Guido Castelnuovo, Università di Roma "La Sapienza", Roma, Italy (January 28 & 29, 2016).

208. "On the slip boundary conditions for the compressible Navier-Stokes equations," Invited Lecture (50min), *Advances in Kinetic and Fluid Dynamics Transport: Analysis and Approximations, Celebrating Claude Bardos' Impact in Mathematics and Sciences*, Institute for Computational Engineering and Sciences, University of Texas at Austin, Austin, USA (February 22–26, 2016).

209. "Decay of a linear oscillator in a rarefied gas: Spatially one-dimensional case," Seminar, Department of Mathematics, Imperial College London, London, UK (March 8, 2016).

210. "Decay of a linear oscillator in a rarefied gas: Spatially one-dimensional case," Invited Lecture (45min), *KI-Net Conference: Boundary Value Problems and Multiscale Coupling Methods for Kinetic Equations*, University of Wisconsin-Madison, Madison, USA (April 21–24, 2016).

211. "Nonlinear acoustic wave propagation in a rarefied gas: Numerical analysis based on kinetic and fluid equations," Invited Lecture (45min), *International Conference on Nonlinear Partial Differential Equations: Theories, Numerics and Applications. On the Occasion of the 60th Birthday of Peter Markowich*, City University of Hong Kong and Hong Kong Polytechnic University, Hong Kong (May 21–23, 2016).

212. "Some basic problems of kinetic theory of gases," Seminar, Department of Mechanical Engineering, National Cheng Kung University, Tainan, Taiwan (October 4, 2016).

213. "On the slip boundary conditions for the compressible Navier–Stokes equations," Invited Lecture (40min), *CMC Workshop on Collective Dynamics of Many-Body Systems and Related Topics*, Seoul National University, Seoul, Korea (November 8–11, 2016).

214. "On the slip boundary conditions for the compressible Navier–Stokes equations," Seminar, Zhou Pei-Yuan Center for Applied Mathematics, Tsinghua University, Beijing, China (November 23, 2016).

215. "Some basic problems of kinetic theory of gases," Colloquium, School of Mathematical Sciences, Shanghai Jiao Tong University, Shanghai, China (December 14, 2016).

216. "On the slip boundary conditions for the compressible Navier-Stokes equations," Invited Lecture (50min), *2016 Taiwan-Japan Workshop on Dispersion, Navier-Stokes, Kinetic, and Inverse Problems*, National Cheng Kung University, Tainan, Taiwan (December 24–27, 2016).

217. "Slip boundary conditions for the compressible Navier-Stokes equations: Case of a polyatomic gas," Invited Lecture (50min), *Recent Advances on Particle Systems in Kinetic Theory: A Celebration of Sasha Bobylev's Impact in the Mathematics and Computations of Kinetic Theory*, Institute for Computational Engineering and Sciences, University of Texas at Austin, Austin, USA (May 8–12, 2017).

218. "Asymptotic and numerical methods in kinetic theory of gases," Short Course (3hr × 2), School of Mathematical Sciences, Capital Normal University, Beijing, China (May 26 & 27, 2017).

219. "On the slip boundary conditions for the compressible Navier-Stokes equations," Invited Lecture (30min), *Workshop on Kinetic Models: Theory, Numerics and Analysis*, School of Mathematical Sciences, Capital Normal University, Beijing, China (May 28 & 29, 2017).

220. "On the slip boundary conditions for the compressible Navier-Stokes equations," Seminar, Institute of Applied Mathematics, Academy of Mathematics and System Sciences, Chinese Academy of Sciences, Beijing, China (May 31, 2017).

221. "Shock wave structure for polyatomic gases with large bulk viscosities," Invited Lecture (35min), *7th International Workshop on Kinetic Theory & Applications: In Honour of the 70th Birthday of Alexander Bobylev*, Karlstad University, Karlstad, Sweden (June 19–21, 2017).

222. "Asymptotic methods in kinetic theory of gases: An introduction," Short Course (90min × 2), Department of Mathematics, The Chinese University of Hong Kong, Hong Kong (August 14 & 15, 2017).

223. "On the slip boundary conditions for the compressible Navier-Stokes equations," Seminar, Department of Mathematics, City University of Hong Kong, Hong Kong (August 16, 2017).

224. "Shock wave structure for polyatomic gases with large bulk viscosities," Invited Lecture (40min), *Kinetic Equations: Modeling, Analysis and Numerics: A Celebration of Irene M. Gamba's Impact in Modeling, Analysis and Numerical Simulations of Kinetic Equations* University of Texas at Austin, Austin, USA (September 18–22, 2017).

225. "Shock wave structure for polyatomic gases with large bulk viscosities," Séminaire Laurent Schwartz: EDP et Applications, Centre de Mathématiques Laurent Schwartz (CMLS), École Polytechnique, Palaiseux, France (December 12, 2017).

226. "Shock wave structure for polyatomic gases with large bulk viscosities," Invited Lecture (50min), *2016 Taiwan-Japan Workshop on Dispersion, Navier–Stokes, Kinetic, and Inverse Problems*, National Cheng Kung University, Tainan, Taiwan (December 22–25, 2017).

227. "Slip boundary conditions for the compressible Navier–Stokes equations: Case of a polyatomic gas," Invited Lecture (45min), *The 7th Workshop on Theory and Numerics of Kinetic Equations*, University of Saarland, Saarbrücken, Germany (May 28–30, 2018).

228. "Slip boundary conditions for the compressible Navier-Stokes equations for a polyatomic gas," Invited Lecture (50min), *International Workshop on Kinetic Theory and Related Topics*, Tsinghua Sanya International Mathematics Forum (TSIMF), Sanya, China (June 25–29, 2018).

229. "Shock wave structure for a polyatomic gas with large bulk viscosity," Invited Lecture (50min), *2018 International Workshop on Hyperbolic and Kinetic Problems: Theory and Applications*, Institute of Mathematics, Academia Sinica, Taipei, Taiwan (July 10–14, 2018).

230. "Theory and numerical approach in kinetic theory of gases," Short Course (90min × 3), *2018 International Graduate Summer School on "Frontiers of Applied and Computational Mathematics"*, Institute of Natural Sciences (INS), Shanghai Jiao Tong University, July 9-20, 2018).

231. "Shock wave structure for a polyatomic gas with large bulk viscosity," Invited Lecture (35min), *Conference on Kinetic and Transport Equations: Mathematical Advances and Applications, in Honor of Giovanni Frosali, Roberto Monaco, and Giampiero Spiga*, Università di Parma, Parma, Italy (October 10–12, 2018).

232. "Slip boundary conditions for the compressible Navier–Stokes equations," Seminar, Dipartimento di Matematica e Informatica. Università di Catania (October 17, 2018).

233. "On the boundary condition for the Boltzmann equation," Mini Course (2hr × 2), School of Mathematical Sciences, Capital Normal University, Beijing, China (April 17 & 19, 2019).

234. "Shock wave structure for a polyatomic gas with large bulk viscosity, Seminar, Department of Mathematical Sciences, Tsinghua University, Beijing, China (April 18, 2019).

235. "Shock wave structure for a polyatomic gas with temperature-dependent specific heats," Seminar, Institute of Applied Mathematics, Academy of Mathematics and System Sciences, Chinese Academy of Sciences, Beijing, China (April 22, 2019).

236. "Shock-wave structure for a polyatomic gas with large bulk viscosity," Invited Lecture (45min), *Joint Workshop "Kinetics & BEM on the Saar," Dedicated to Sergej Rjasanow on the Occasion of His 60th Birthday*, Saarland University, Saarbrücken, Germany (June 4–7, 2019).

237. "Shock-wave structure for a polyatomic gas," Invited Lecture (45min), *Flash Workshop on Multicomponent and Reactive Mixtures: Kinetic Equations, Multiscale Asymptotics, and Related Numerical Methods*, Centre de Mathématiques Appliquées, École Polytechnique, Palaiseux, France (June 13, 2019).

238. "A kinetic model for a polyatomic gas with temperature-dependent specific heats and its application," Seminar, Institute of Applied Mathematics, Academy of Mathematics and System Sciences, Chinese Academy of Sciences, Beijing, China (June 25, 2019).

239. "A kinetic model for a polyatomic gas with temperature-dependent specific heats and its application to shock-wave structure," Invited Lecture (40min), *Workshop on Recent Advances in Nonlocal Kinetic, Fluid and Diffusive PDEs*, Utop Ubless Hotel, Jeju, South Korea (August 19–23, 2019).

240. "Kinetic Theory" Full course in the autumn semester (4hr × 12 weeks), Dipartimento di Scienze Matematiche, Fisiche e Informatiche, Università di Parma, Parma, Italy (October–December, 2019).

241. "Chapman–Enskog expansion," Course on Kinetic Theory (3hr), Dipartimento di Matematica, Politecnico di Milano, Milano, Italy (November 19, 2019).

242. "Kinetic theory of polyatomic gases: Model Boltzmann equations and their applications," Colloquium Talk, Institute of Natural Sciences, Shanghai Jiao Tong University, Shanghai, China (January 7, 2020).

243. "Model Boltzmann equations for a polyatomic gas and their applications," Analysis Seminar, Institute of Mathematics, Academia Sinica, Taipei, Taiwan (January 13, 2020).

244. "Kinetic theory of polyatomic gases: Model Boltzmann equations and their applications," Seminar (remote), School of Mathematical Sciences, Capital Normal University, Beijing, China (January 5, 2021).

245. "Two-temperature Navier–Stokes equations for a polyatomic gas derived from kinetic theory," Colloquium Talk (remote), School of Mathematical Sciences, Shanghai Jiao Tong University, Shanghai, China (April 23, 2021).

246. "Model Boltzmann equations for a polyatomic gas and applications," Invited Lecture (remote, 45min), Conference (remote) *The Legacy of Carlo Cercignani: from Kinetic Theory to Turbulence Modeling,* Dipartimento di Matematica, Politecnico di Milano, Milano, Italy (May 24–28, 2021).

247. "Two-temperature Navier-Stokes equations for a polyatomic gas derived from ES model of the Boltzmann equation," Analysis Seminar (remote), Institute of Mathematics, Academia Sinica, Taipei, Taiwan (August 23, 2021).

248. "Two-temperature Navier-Stokes equations for a polyatomic gas and their boundary conditions," Seminar (remote), School of Mathematical Sciences, Peking University, Beijing, China (April 20, 2022).

249. "Two-temperature Navier-Stokes equations for a polyatomic gas and their boundary conditions," Invited Lecture (remote, 40min), Workshop (hybrid), *The Boltzmann Equation: In the Trail of Torsten Carleman*, Institut Mittag-Leffler, Djursholm, Sweden (May 16–20, 2022).

250. "Boundary conditions for the Boltzmann equation from a kinetic model of gas-surface interaction," Invited Lecture (remote, 30min), *Current Trends in Kinetic Theory and Related Models: Workshop in Memory of Giampiero Spiga*, University of Parma, Parma, Italy (October 13 & 14, 2022).

251. "Boundary conditions for the Boltzmann equation derived from a kinetic model of gas-surface interactions," Invited Lecture (40min), Workshop *Recent Contributions in Kinetic Theory and Applications*, Laboratoire Jacques-Louis Lions, Sorbonne Université, Paris, France (March 6, 2023).

252. "Boundary conditions for the Boltzmann equation derived from a kinetic model of gas-surface interaction," Invited Lecture (50min), *2023 NCTS PDE Conference on Recent Development of Fluid Dynamics and Kinetic Theory*, National Center for Theoretical Sciences, National Taiwan University, Taipei, Taiwan (June 5–9, 2023).