

Biographical Sketch: Cheuk-Yin Wong

Education :

A. B.	Physics	Princeton University	1961
M. A.	Physics	Princeton University	1963
Ph.D.	Physics	Princeton University	1966

Experience :

Research Physicist → Distinguished Senior Physicist Emeritus, Distinguished Senior Physicist	2/1966 - 1/2004	Oak Ridge National Laboratory, Oak Ridge, TN
Research Fellow	9/1968 - 12/1969	Niels Bohr Institute, Copenhagen, Denmark
Visiting Scientist	9/1982 - 7/1983	Center for Theoretical Physics, Massachusetts Institute of Technology, Cambridge, MA
Visiting Professor	5/1988 - 8/1988	Institute of Nuclear Study, University of Tokyo, Japan
Research Professor	1/2004 - 12/2013	University of Tennessee, Knoxville, TN

Awards and Honors :

Kusaka Prize in Physics	Princeton University	1961
Fellow	American Physical Society	1978
Publication Award	Lockheed Martin Energy Systems	1986

Published Books :

1. C. Y. Wong, *INTRODUCTION TO HIGH-ENERGY HEAVY ION COLLISIONS*, World Scientific Publisher (1994), (translated into Chinese by Weining Zhang, and published by the Harbin Institute of Technology, 2002).
2. *Quark Matter '91*, Editors: T. C. Awes, F. E. Obenshain, F. Plasil, and M. Strayer, and C. Y. Wong, North-Holland (1992).
3. *Relativistic Aspects of Nuclear Physics*, Editors: T. Kodama, K. C. Chung, Y. Hamma, G. Odyniec, H. Stroebele, and C. Y. Wong, World Scientific Publisher (1996).
4. *Recent Advances and Cross-Century Outlook in Physics*, Editors: P. S. Chen and C. Y. Wong, World Scientific Publisher (2000).
5. *Commemorating the Past and Looking Towards the Future* Editors: Ngee-Pong Chang, Kenneth Young, Hon Ming Lai, and C. Y. Wong, World Scientific Publisher (2002).

6. *The Joy of the Search for Knowledge – A Tribute to Nobel Laureate Prof. Dan Tsui*, Editors: C. Y. Wong, James Lo, and Shui-Yin Lo, World Scientific Publisher (1999), (also in Chinese, translated from the original, published by Science Press, Beijing, 2004.)

Other Significant Publications :

1. M. Brack, J. Damgaard, A. S. Jensen, H. C. Pauli, V. M. Strutinsky, C. Y. Wong *Shell-Correction Approach to Nuclear Shell Effects and its Applications to Fission Process*, Rev. Mod. Phys. **44**, 320 (1972).
2. C. Y. Wong, *Interaction Barrier in Charged-Particle Nuclear-Reactions*, Phys. Rev. Lett. **31**, 766 (1973). The cross section formula in this article has become known as the Wong formula for fusion reactions.
3. C. Y. Wong, *Shells in a Simple Anisotropic Harmonic Oscillator*, Phys. Letts. **32B**, 668-671 (1970).
4. C. Y. Wong and T. A. Welton, *Supersonic Heavy-Ion Collisions*, Phys. Letts. **49B**, 243 (1974).
5. C. Y. Wong, *Molecular States of Heavy Quark Mesons* Phys. Rev. **C69**, 055202 (2004).
6. C. Y. Wong, *Heavy Quarkonia in Quark-Gluon Plasma*, Phys. Rev. **C72**, 034906 (2005).
7. C.Y. Wong, *Dynamics of Nuclear Fluid. VIII. Time-dependent Hartree-Fock Approximation from a Classical Point of View*, Phys. Rev. **C25**, 1460 (1982).
8. C.Y. Wong and H. H. K. Tang , *Extended Time-Dependent Hartree-Fock Approximation with Particle Collisions* , Phys. Rev. Lett. **40**, 1070 (1978).
9. C. Y. Wong, *Toroidal and Spherical Bubble Nuclei*, Ann. Phys. **77**, 279 (1973).
10. RC Wang, CY Wong, *Finite-size effect in the Schwinger particle-production mechanism*, Phys. Rev. **D38**, 348 (1988).
11. C. Y. Wong, E.S. Swanson and T. Barnes, *Cross-Sections for Pi- and Rho-Induced Dissociation of J/Psi and Psi'*, Phys. Rev. **C62**, 045201 (2000).
12. C. Y. Wong, G. Wilk, *Tsallis Fits to pT Spectra and Multiple Hard Scattering in pp Collisions at the LHC*, Phys. Rev. D **87**, 114007 (2013)
13. C.Y. Wong, H. Wang, *Effects of parton intrinsic transverse momentum on photon production in hard-scattering processes*, Phys. Rev. C **58**, 376 (1998).
14. H.W. Crater, R.L. Becker, C.Y. Wong, P. Van Alstine, *Nonperturbative solution of two-body Dirac equations for quantum electrodynamics and related field theories*, Phys. Rev. D **46**, 5117 (1992).

Number of Publications (about 270) A full list of publication is presented at <https://scholar.google.com/citations?user=iO8PmbAAAAAJ&hl=en>

Most Recent Publications, since 2000 :

1. C. Y. Wong, *Analytical Expressions for the Hard-Scattering Production of Massive Partons*, Journal of Physics: Conference Series 668, 012097 (2016).
2. T. K. Lee, C.Y. Wong, *Nuclear annihilation by antinucleons*, Phys. Rev. C 93, 014616 (2016).
3. A. Staszczak, C.Y. Wong, *Theoretical studies of possible toroidal high-spin isomers in the light-mass region*, Proc. 12th Conf. on Nucleus-Nucleus Collisions, June 21-26, 2015, Catania, Italy.
4. A. Staszczak, C.Y. Wong, *Particle-hole nature of the light high-spin toroidal isomers*, Acta Phys. Pol. B 46, 675 (2015).
5. A. Staszczak, C.Y. Wong, *Toroidal high-spin isomers in light nuclei with N not equal to Z* , Phys. Scr. 90 (2015) 114006.
6. C. Y. Wong, *Event-by-Event Study of Space-Time Dynamics in Flux-Tube Fragmentation*, arXiv:1510.07194.
7. C. Y. Wong, *Signature of the Fragmentation of a Color Flux Tube* Phys. Rev. D 92, 074007 (2015).
8. C. Y. Wong, *From QCD-based hard-scattering to nonextensive statistical mechanical descriptions of transverse momentum spectra in high-energy pp and $p\bar{p}$ collisions* Phys. Rev. D91 114027 (2015).
9. C.Y. Wong, W.N. Zhang, J. Liu, P. Ru, *Chaoticity and Coherence in Bose-Einstein Condensation and Correlations* arXiv:1501.04530.
10. A. Staszczak, C.Y. Wong, *A region of high-spin toroidal isomers*, Phys. Lett. B 738 (2014) 401.
11. C.Y. Wong, G. Wilk, L. J. L. Cirto, C. Tsallis, *Possible Implication of a Single Nonextensive p_T Distribution for Hadron Production in High-Energy pp Collisions* arXiv:1412.0474.
12. L. J. L. Cirto, C. Tsallis, C-Y. Wong, G. Wilk, *The transverse-momenta distributions in high-energy pp collisions – A statistical-mechanical approach*, arXiv:1409.3278.
13. A. Sen, J. Gerhard, G. Torrieri, K. Read, C.Y. Wong, *Longitudinal hydrodynamics from event-by-event Landau initial conditions*, Phys. Rev. C 91, 024901 (2015).
14. C.Y. Wong, A. Sen, J. Gerhard, G. Torrieri, K. Read, *Analytical Solutions of Landau (1+1)-Dimensional Hydrodynamics*, Phys. Rev. C 90, 064907 (2014).
15. H. W. Crater, C.Y. Wong, *On the Question of the Point-Particle Nature of the Electron*, arXiv:1406.7268.

16. C.Y. Wong, *Foundation of Hydrodynamics of Strongly Interacting Systems* EPJ Web of Conferences 71, 00140 (2014).
17. C. Y. Wong, *An Overview of the Anomalous Soft Photons in Hadron Production*, arXiv:1404.0040.
18. C. Y. Wong, Horace W. Crater, James Schiermeyer, Joshua Whitney, Cheuk-Yin Wong *Applications of Two Body Dirac Equations to Hadron and Positronium Spectroscopy*, arXiv:1403.6466, CST-MISC joint international symposium on particle physics - From spacetime dynamics to phenomenology - Tokyo, March 15-16, 2014.
19. A. Staszczak, C. Y. Wong, *Light rotating toroidal nuclei*, arXiv:1312.3413.
20. Teck-Ghee Lee, Cheuk-Yin Wong, *Extended Glauber Model of Antiproton-Nucleus Annihilation for All Energies and Mass Numbers*, Phys. Rev. C89, 054601 (2014).
21. Jie Liu, Peng Ru, Wei-Ning Zhang, Cheuk-Yin Wong, *Chaotic parameter in Hanbury-Brown-Twiss interferometry in an anisotropic boson gas model*, Int. J. Mod. Phys. E, 22 (2013) 1350083
22. C. Y. Wong, G. Wilk, *Relativistic Hard-Scattering and Tsallis Fits to p_T Spectra in pp Collisions at the LHC* arXiv:1309.7330, presented at the Low-x Workshop, May 30 - June 4, 2013, Rehovot and Eilat, Israel.
23. C. Y. Wong, G. Wilk, *Tsallis Fits to p_T Spectra and Multiple Hard Scattering in pp Collisions at the LHC*, Phys. Rev. D 87, 114007 (2013)
24. A V. Koshelkin and C. Y. Wong, *Compactification of QCD_4 to QCD_2 in a Flux Tube*, Phys. Rev. **D86**, 064603 (2012).
25. C. Y. Wong, *Reaction Cross Section in Heavy-Ion Collisions*, Phys. Rev. C **86**, 064603 (2012).
26. C. Y. Wong and G. Wilk, *Tsallis Fits to p_T Spectra for pp Collisions at LHC*, Acta Physica Polonica **B43**, 2047 (2012).
27. C. Y. Wong, *Feynman Amplitude Approach to study the Passage of a Jet in a Medium*, talk presented at the 11th International Conference on Nucleus-Nucleus Collisions, May 27-June 1, 2012, San Antonio, TX, to be published in Journal of Physics Conference Series, arXiv:1211.7024 (2012).
28. A. V. Koshelkin and C. Y. Wong, *2D Gauge Field Theory*, Proceedings of Sixth International Conference on Quarks and Nuclear Physics, April 16-20, 2012, Ecole Polytechnique, Palaiseau, Paris, Proceedings of Sciences (QNP2012) **176**, 1 (2012).
29. C. Y. Wong, *Novel Bose-Einstein Interference in the Passage of a Fast Particle in a Dense Medium*, invited talk presented at the 35th Symposium on Nuclear Physics, Cocoyoc, Mexico, January 3, 2012, to be published in IOP Conference Series, J. Phys.: Conf. Ser. **387**, 012009 (2012).

30. H. W. Crater and C. Y. Wong, *Magnetic States at Short Distances*, Phys. Rev. **D85**, 116005 (2012).
31. C. Y. Wong, *Bose-Einstein Interference in the Passage of a Jet in a Dense Medium*, Phys. Rev. **C85**, 064909 (2012) .
32. C. Y. Wong, *Momentum Kick Model Description of the Ridge in ($\Delta\phi$)-($\Delta\eta$) Correlation in pp Collisions at 7 TeV* , Phys. Rev. **C84**, 024901 (2011).
33. C. Y. Wong and Teck-Ghee Lee, *Stability of Matter-Antimatter Molecules*, Ann. Phys. **326**, 2138 (2011).
34. C. Y. Wong, *Anomalous Soft Photons associated with Hadron Production in String Fragmentation* , AIP Conf. Proc. **1343**, 447 (2011).
35. C. Y. Wong, *Foundation of Hydrodynamics for Systems with Strong Interactions*, AIP Conf. Proc. **1312**, 39 (2010).
36. C. Y. Wong, *Klein-Gordon Equation in Hydrodynamical Form*, Jour. Math. Phys. **51**, 122304 (2010).
37. C. Y. Wong, *Anomalous Soft Photons in Hadron Production* , Phys. Rev. **C81**, 064903 (2010).
38. C. Y. Wong, *The Ridge Associated with the Near-side Jet in High Energy-Heavy-Ion Collisions*, Nonlin. Phenom. Complex Syst. **12**, 315 (2009).
39. C. Y. Wong, *The Wigner Function of Produced Particles in String Fragmentation*, Phys. Rev. **C80**, 054917 (2009).
40. C. Y. Wong, *Momentum Kick Model Analysis of PHENIX Near-Side Ridge Data and Photon Jet*, Phys. Rev. **C80**, 034908 (2009).
41. H. W. Crater, Jin-Hee Yoon, and C. Y. Wong, *Singularity Structures in Coulomb-Type Potentials in Two Body Dirac Equations of Constraint Dynamics*, Phys. Rev. **D79**, 034011 (2009).
42. Andrzej Staszczak and C. Y. Wong, *Toroidal Super-Heavy Nuclei in Skyrme-Hartree-Fock Approach*, Proceedings of the Zakopane Conference on Nuclear Physics, September 1-7, 2008, Acta Phys. Polon. **B40**, 753 (2009).
43. C. Y. Wong, *Lectures on Landau Hydrodynamics*, Lectures presented at the Helmholtz International Summer School, Bogoliubov Laboratory of Theoretical Physics, JINR, Dubna, July 14-26, 2008, arXiv:0809.0517 (2008).
44. C. Y. Wong, *Landau Hydrodynamics Reexamined*, Phys. Rev. **C78**, 054902 (2008).
45. C. Y. Wong, *The Momentum Kick Model Description of the Near-Side Ridge and Jet Quenching*, Phys. Rev. **C78**, 064905 (2008).
46. C. Y. Wong, *Exploring Early Parton Momentum Distribution with the Ridge from the Near-Side Jet*, Proceedings of 20th International

- Conference on Ultra-Relativistic Nucleus Nucleus Collisions, Jaipur, India, Feb. 4-10, 2008, J. Phys. **G35**, 104085 (2008).
47. Li-Li Yu, Wei-Ning Zhang, and C. Y. Wong, *HBT interferometry with quantum transport of the interfering pair*, Phys. Rev. **C78**, 014908 (2008).
 48. C. Y. Wong, *Parton Momentum Distribution at the Moment of Jet-Parton Collision*, Chin. Phys. Lett. **25**, 3936 (2008).
 49. Taesoo Song, Yongjae Park, Su Hounng Lee, C. Y. Wong *The thermal width of heavy quarkonia moving in quark gluon plasma*, Phys. Lett. **B659**, 621 (2008).
 50. Teck-Ghee Lee, C. Y. Wong, and Peter Lee-Shien Wang, *Peculiar Features of the Interaction Potential between Hydrogen and Antihydrogen at Intermediate Separations*, Chin. Phys. **B17**, 2897 (2008).
 51. C. Y. Wong and Wei-Ning Zhang, *Chaoticity Parameter Lambda in Hanbury-Brown Twiss Interferometry*, Phys. Rev. **C76**, 034905 (2007).
 52. C. Y. Wong, *Ridge Structure associated with the Near-Side Jet in the (Delta phi)-(Delta eta) Correlation*, Phys. Rev. **C76**, 054908 (2007).
 53. Yongjae Park, Kyung-Il Kim, Taesoo Song, Su Hounng Lee, C. Y. Wong, *The widths of quarkonia in quark gluon plasma*, Phys. Rev. **C76**, 044907 (2007).
 54. H. W. Crater and C. Y. Wong, *Two gamma quarkonium and positronium decays with Two-Body Dirac equations of constraint dynamics*, Proceedings of APS Topical Group on Hadron Physics, Nashville, TN, Oct 22-24, 2007, published by Journal of Physics (UK), J. Phys. Conference Series, Conf. Ser. **69**, 012021 (2007), [hep-ph/0701045]
 55. C. Y. Wong and H. W. Crater, *Potential Models and Lattice Gauge Current-Current Correlators*, Phys. Rev. **D75**, 034505 (2007).
 56. C. Y. Wong, *Quarkonia and Quark Drip Lines in Quark-Gluon Plasma*, Phys. Rev. **C76**, 014902 (2007).
 57. C. Y. Wong and W. N. Zhang, *Single-Event Hanbury-Brown-Twiss Interferometry*, Proceedings of the XI International Workshop on Correlation and Fluctuation in Multiparticle Production, Nov. 21-24, 2006, Hangzhou, China, Int. J. Mod. Phys. **E16**, 3262 (2007)
 58. W. N. Zhang and C. Y. Wong, *Explanation of the RHIC HBT Puzzle by a Granular Source of Quark-Gluon Plasma Droplets*, Proceedings of the XI International Workshop on Correlation and Fluctuation in Multiparticle Production, Nov. 21-24, 2006, Hangzhou, China, hep-ph/0702120 (2007).
 59. C. Y. Wong and H. W. Crater, *Potential Models and Lattice Gauge Current-Current Correlators*, Phys. Rev. **D75**, 034505 (2007).

60. C. Y. Wong, *Quarkonia and Quark Drip Lines in Quark-Gluon Plasma*, Phys. Rev. **C76**, 014902 (2007).
61. C. Y. Wong, *Heavy Quarkonia and Quark Drip Lines in Quark-Gluon Plasma* J. Phys. **G32**, S301 (2006).
62. W. N. Zhang, Y. Y. Ren, and C. Y. Wong, *Analysis of pion elliptic flows and HBT interferometry in a granular quark-gluon plasma droplet model*, Phys. Rev. **C74**, 024908 (2006).
63. H. W. Crater and C. Y. Wong, *Tests of Two-Body Dirac Equation Wave Functions in the Decays of Quarkonium and Positronium into Two Photons*, Phys. Rev. **D74**, 054028 (2006).
64. C. Y. Wong, *Quantum Treatment of the Multiple Scattering and Collective Flow in Intensity Interferometry*, AIP Conference Proceedings, Volume 828, Edited by V. Simak et al., pages 617-622 (2006), [hep-ph/0510258].
65. C. Y. Wong, *Effects of Dynamical Quarks on the Stability of Heavy Quarkonia in Quark-Gluon Plasma*, talk presented at Rencontre de Blois, Chateau de Blois, France, May 15-20, 2005, [hep-ph/0509088].
66. W. N. Zhang, S. X. Li, C. Y. Wong, and M. J. Efaaf, *Signals in Single-Event Pion Interferometry for Granular Sources of Quark-Gluon Plasma Droplets*, Phys. Rev. **C71**, 064908 (2005).
67. H. W. Crater and C. Y. Wong, *Meson-Meson Scattering in Relativistic Constraint Dynamics*, talk present at the First Meeting of the APS Topical Group on Hadronic Physics (Fermilab, October 24-26, 2004) Journal-ref: J.Phys.Conf.Ser. 9 178-182 (2005), [nucl-th/0412024].
68. C. Y. Wong, *Heavy Quarkonia in Quark-Gluon Plasma*, Phys. Rev. **C72**, 034906 (2005).
69. C. Y. Wong and W. N. Zhang, *Signature of Granular Structures by Single-Event Intensity Interferometry*, Phys. Rev. **C70**, 064904 (2004).
70. W. N. Zhang, M.J. Efaaf, and C. Y. Wong, *Pion Interferometry for a Granular Source of Quark-Gluon Plasma Droplets*, Phys. Rev. **C70**, 024903 (2004).
71. W. N. Zhang, M. J. Efaaf, C. Y. Wong, and M. Khaliliasr, *Pion Interferometry for Hydrodynamical Expanding Source with a Finite Baryon Density*, Chinese Phys. Lett. **21**, 1918 (2004).
72. C. Y. Wong, *Does HBT Measure the Freeze-out Source Distribution?* J. Phys. **G30**, S1053 (2004).
73. Jin-Hee Yoon and C. Y. Wong, *Relativistic Generalization of the Gamow Factor for Fermion Pair Production or Annihilation*, J. Phys. **G31**, 149 (2005).
74. C. Y. Wong, *Molecular States of Heavy Quark Mesons*, Phys. Rev. **C69**, 055202 (2004).

75. W. N. Zhang and C. Y. Wong, *Total Hadron-Hadron Cross Sections at High Energies*, Phys. Rev. **C68**, 035211 (2003).
76. Yongseok Oh, Taesoo Song, Su Hounng Lee, and C. Y. Wong, *Form-Factor Dependence of the J/ψ Dissociation Cross Sections in Meson Exchange Model*, J. Korean Phys. Soc. **43**, 1003 (2003).
77. C. Y. Wong, *Intensity Interferometry for a Chaotic Source with a Collective Flow and Multiple Scattering*, J. Phys. **G29**, 2151 (2003).
78. C. Y. Wong, *Explicit Solution of the Time Evolution of the Wigner Function*, invited talk presented at the Wigner Centennial Conference, Pecs, Hungary, July 8-12, 2002, published in the Journal of Optics B: Quantum and Classical Optics, **B5**, S420 (2003).
79. Xiao-Ming Xu, C. Y. Wong, T. Barnes, *Anomalous J/ψ suppression and charmonium dissociation cross sections*, Phys. Rev. **C67**, 014907 (2003).
80. C. Y. Wong, E. S. Swanson, T. Barnes, and H. W. Crater, *the Role of Produced Hadrons in J/ψ Suppression*, Nucl. Phys. **A715**, 541 (2003).
81. C. Y. Wong, E. S. Swanson and T. Barnes, *Heavy Quarkonium Dissociation Cross Sections in Relativistic Heavy-Ion Collisions*, Phys. Rev. **C65**, 014903 (2002).
82. C. Y. Wong, T. Barnes, E. S. Swanson, and H. W. Crater, *Dissociation of a Heavy Quarkonium at $T < T_c$* , Proceedings of the Workshop on the Physics of the Quark-Gluon Plasma, September 4-7, 2001, Palaiseau, France.
83. C. Y. Wong, *Dissociation of Heavy Quarkonia in the Quark-Gluon Plasma* J. Phys. **G28**, 2349 (2002).
84. C. Y. Wong, *Dissociation of a Heavy Quarkonium at High Temperatures*, Phys. Rev. **C65**, 034902 (2002).
85. C. Y. Wong and H. W. Crater, *the Relativistic N -body Problem in a Separable Two-Body Basis*, Phys. Rev. **C63**, 044907 (2001).
86. C. Y. Wong, *Signatures of Quark Gluon Plasma Phase Transition in High-Energy Nuclear Collisions*, Presented at 3rd Catania Relativistic Ion Studies on Phase Transitions Strong Interactions, Acicastello, Italy, 22-26 May 2000, Nucl. Phys. **A681**, 22 (2001).
87. C. Y. Wong, E.S. Swanson and T. Barnes, *Cross-Sections for π - and ρ -Induced Dissociation of J/ψ and ψ'* , Phys. Rev. **C62**, 045201 (2000).
88. C.Y. Wong, E.S. Swanson and T. Barnes, *Cross-Sections for the Dissociation of J/ψ and ψ' by π and ρ at Low Energies*, in Proceedings of the 28th International Workshop on Gross Properties of Nuclei and Nuclear Excitation, Hirschegg, Austria, 16-22 Jan 2000.

89. T. Barnes, E.S. Swanson, and C.Y. Wong, *Charmonium plus Light hadron Cross sections*, published in the Proceedings of the Heavy Quark Physics 5, Dubna, 6-8 April 2000.
90. Jin-Hee Yoon and C. Y. Wong, *Relativistic Modification of the Gamow Factor*, Phys. Rev. **C61**, 044905 (2000).

Other Professional Activities :

Editor	Chinese Physics	1983-1989
Vice-Chairman	Overseas Chinese Physics Association	1997-1998
Chairman	Overseas Chinese Physics Association	1999-2000
Editor	International Journal of Modern Physics E	1998-2004

Thesis Adviser :

J. A. Wheeler Princeton University