

# *Curriculum Vitae*

*Dipankar Home*

Bose Institute, Kolkata

(Research Institute of Govt. of India, Department of Science and Technology)

## **Date of Birth**

11 November, 1955

## **Contact Details**

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## **Field of Specialization**

Foundations of Quantum Mechanics and Quantum Information

## **Present Position**

Senior Professor, Department of Physics, Bose Institute, Kolkata

## Awards/Distinctions Received

- Elected Fellow of the National Academy of Sciences, India, 2011
- Awarded Jawaharlal Nehru Fellowship, 2002
- Awarded B. M. Birla Science Prize, 1995
- Awarded Homi Bhabha Fellowship, 1993
- Awarded Associateship of the Indian Academy of Sciences, 1987
- Awarded the Indian National Science Academy Medal for Young Scientists, 1986

## Books

### Research-level Books

(a) Authored a book, titled “*Conceptual Foundations of Quantum Physics - An Overview from Modern Perspectives*” (Plenum, New York, 1997). *Foreword* by the Nobel laureate Anthony Leggett (This book was written with the support of *Homi Bhabha Fellowship*).

Appreciative reviews of this book appeared in *Physics Today* (October, 1998), *The Times (London) Higher Education Supplement* (25 September, 1998), *Progress in Quantum Electronics* Vol.22, pp.41-42 (1998); and *Foundations of Physics*, Vol. 31, pp. 855-857 (2001). The reviews were written by some of the leading experts in this area, viz. Profs. James Cushing, Alastair Rae, Peter Landsberg and Daniel Greenberger respectively.

(b) Co-authored a book, titled “*Einstein’s Struggles with Quantum Theory: A Reappraisal*”, with Andrew Whitaker (Springer, New York, 2007). *Foreword* by Roger Penrose (This book was written with the support of *Jawaharlal Nehru Fellowship*).

Appreciative reviews of this book appeared in *Physics Today* (May, 2008) and *Journal of American Mathematical Society: MathSciNet* (2008).

## A Brief Summary of the Significant Research Contributions

Dipankar Home is one of the early Indian researchers pursuing investigations on the Foundational issues of Quantum Mechanics (QM) since 1980s – a line of study that has gradually become amenable to experimental studies as well as has become intimately related to the currently vibrant area of Quantum Information Theory and its applications.

Among his **131** Research Publications with his various collaborators that have been cited in **20** Books, and that have *Total Citation Number* around **1809** (Google Scholar), the most significant works are as follows:

A) A hitherto unexplored connection was revealed between two profound features of QM, viz. *Quantum Indistinguishability* (QI) and *Quantum Entanglement* (QE) by invoking QI for formulating an *arbitrarily efficient generic scheme* that can *entangle*, using any spin-like variable, any two identical bosons/fermions coming from independent sources [**Physical Review Letters** 88, 050401 (2002)].

Having such an efficient generic scheme for generating QE is of considerable importance since QE lies at the core of Quantum Foundations and various applications of Quantum Information Theory. Furthermore, this work suggested a novel form of complementarity between particle distinguishability and the amount of entanglement generated, besides providing one of the ingredients of the seminal work by C. W. J. Beenakker et al. [**Physical Review Letters** 93, 020501 (2004)] which initiated studies on Free-Electron Quantum Computation.

B) The above-mentioned line of study blending QI and QE was enriched by uncovering an earlier unnoticed property of QE involving any two identical particles which has been called '*Duality in Entanglement*' [**Physical Review Letters** 110, 140404 (2013)]. Importantly, this property enables studying the transition from QI to Classical Distinguishability, as well as can be an effective tool for empirically probing aspects of QI for *mesoscopic/macrosopic molecules* without requiring to bring them together, thereby avoiding the effect of interaction between them.

For photons, this predicted property of '*Entanglement Duality*' (involving the manifestation of polarization entanglement when the photons are labelled by different momenta, or, for the same source, manifesting momentum entanglement when the photons are labelled by polarization variables) has been *experimentally verified* at Tsinghua University, Beijing [**New Journal of Physics** 16, 083011 (2014)], followed by another *experimental study* at INRIM, Torino [**Physical Review A** 91, 062117 (2015)] using Bell measurements in order to probe some subtle aspects of our predicted '*Entanglement Duality*'.

C) A series of investigations on an intriguing fundamental Quantum Mechanical effect known as the *Quantum Zeno Effect* throwing light on the various critical aspects of its treatment, its wide-ranging conceptual implications and the question of its experimental realizability, culminated in a comprehensive and widely cited in-depth analysis of this effect [**Annals of Physics** 258, 237 (1997)].

D) A striking *biomolecular example* was formulated in order to empirically probe aspects of the *Quantum Measurement Problem* in the *mesoscopic domain* [**Physical Review Letters** 76, 2836 (1996)] by using the biochemical property of photolyase enzyme attachment to uv-absorbed DNA molecules. This work was one of the earliest of its kind, trying to use the biomolecular phenomenon in order to provide empirically relevant constraints on the various approaches seeking to address the much debated Quantum Measurement Problem.

*E)* Wigner's argument seeking to demonstrate *Quantum Nonlocality* that was originally formulated only for bipartite states was successfully *generalized* for an *arbitrary multipartite state*, thereby providing a powerful method for obtaining *multipartite Bell-type inequalities* in order to probe Quantum Nonlocality of the states of multipartite systems [**Physical Review A** 91, 012102 (2015)]. The efficacy of such obtained multipartite Bell-type inequalities has been demonstrated for the quadripartite entangled states, thus opening up a novel direction of study in this area.

Other major research contributions of Home with his collaborators are as follows:

*i)* A novel manifestation of *wave-particle duality of single photon states* providing fresh insights into the Bohrian principle of wave particle complementarity was formulated by invoking the quantum mechanical treatment of *tunneling of single photon states* in the context of a double-prism device [**Physics Letters A** 153, 403 (1991); 168, 95 (1992)]. This proposal was *experimentally realized* at the Hamamatsu Photonics Central Research Laboratory, Japan [**Physics Letters A** 68, 1 (1992)].

*ii)* One of the earliest ideas for testing the fundamental property of *Quantum Contextuality* was formulated by introducing the notion of *path-spin intraparticle entanglement* as applied to a *Bell-type inequality* involving the path and spin variables pertaining to a single spin-1/2 particle [**Physics Letters A** 279, 281 (2001)]. This was *experimentally verified* by the neutron interferometric group at Atominstitut, Vienna [**Nature** 425, 45 (2003)].

*iii)* An earlier unexplored application of the temporal analogue of Bell's inequality, known as the *Leggett-Garg inequality* (LGI), for *weak interaction induced two-state oscillations* pertaining to *neutral kaons* and *neutrinos* revealed an intriguing result that *CP violation* occurring in the case of kaon oscillation *enhances* the Quantum Mechanical violation of LGI, a result whose conceptual implications call for a deeper probing [**Physical Review A** 88, 022115 (2013)].

*iv)* The following research works by Home with his collaborators are also noteworthy:

- A curious application of the *Dynamical Model of Spontaneous Wave Function Collapse* in the *cosmological context*, analyzing the role of the liberated energy associated with the wave function collapse process arising from the interaction of a fluctuating scalar field with the matter wave function [**Physics Letters B** 679, 167 (2009)].
- A comprehensive and widely cited Review on *Ensemble Interpretations of Quantum Mechanics* [**Physics Reports** 210, 223 (1992)].
- Derivation of new forms of the *Leggett-type crypto-nonlocal realist inequalities* [**Physical Review A** 84, 052115 (2011)] that are free from any geometrical constraint on the measurement settings, thereby enabling their unambiguous empirical scrutiny.

- A novel analysis of the role of *Statistical Fluctuations* in *Quantum Cryptography* [*Physical Review A* 67, 022306 (2003)].
- Formulation of a testable example showing *Nonlocality of Single Photon States* [*Physics Letters A* 209, 1 (1995)].

## List of 10 Best Publications

1. *Generic Entanglement Generation, Quantum Statistics, and Complementarity*; S. Bose and D. Home, *Physical Review Letters* 88, 050401(2002).
2. *Duality in Entanglement Enabling a Test of Quantum Indistinguishability Unaffected by Interactions*; S. Bose and D. Home, *Physical Review Letters* 110, 140404 (2013).
3. *A Conceptual Analysis of Quantum Zeno; Paradox, Measurement and Experiment*; D. Home and M. A. B. Whitaker, *Annals of Physics* 258, 237 (1997).
4. *DNA Molecular Cousin of Schrödinger's Cat: A Curious Example of Quantum Measurement*; D. Home and R. Chattopadhyaya, *Physical Review Letters* 76, 2836 (1996).
5. *Multipartite Bell-type Inequality by Generalizing Wigner's Argument*; D. Home, D. Saha and S. Das, *Physical Review A* 91, 012102 (2015).
6. *An Experiment to throw more Light on Light*; P. Ghose, D. Home and G. S. Agarwal, *Physics Letters A* 153, 403 (1991);168, 95 (1992).
7. *Bell's inequality for a single spin-1/2 particle and Quantum Contextuality*; S. Basu, S. Bandyopadhyay, G. Kar and D. Home, *Physics Letters A* 279, 281 (2001).
8. *Probing the Leggett-Garg inequality for oscillating neutral kaons and neutrinos*; D. Gangopadhyay, D. Home and A. Sinha Roy, *Physical Review A* 88, 022115 (2013).
9. *Dark energy from quantum wave function collapse of dark matter*; A. S. Majumdar, D. Home and S. Sinha, *Physics Letters B* 679, 167 (2009).
10. *Ensemble Interpretations of Quantum Mechanics: A Modern Perspective*; D. Home and M. A. B. Whitaker, *Physics Reports* 210, 223 (1992).

## Citations

Home's research works embodied in **131** peer-reviewed publications have *Total Citation Number* around **1809** (Google Scholar, June 2016). In addition, Home's **2** Research-level Books have around **190** citations. Home's **15** papers have above **20** citations, and **4** papers have above **100** citations which are listed below:

<i>Sl.</i>	<i>Papers</i>	<i>Citation</i>
1	<i>A Conceptual Analysis of Quantum Zeno; Paradox, Measurement and Experiment</i> ; D. Home and M. A. B. Whitaker, <i>Annals of Physics</i> 258, 237 (1997).	<b>184</b>
2	<i>Ensemble Interpretations of Quantum Mechanics: A Modern Perspective</i> ; D. Home and M. A. B. Whitaker, <i>Physics Reports</i> 210, 223 (1992).	<b>129</b>
3	<i>Bell's Theorem and the EPR Paradox</i> ; D. Home and F. Selleri, <i>Rivista del Nuovo Cimento</i> 14, 9 (1991).	<b>111</b>
4	<i>Generic Entanglement Generation, Quantum Statistics, and Complementarity</i> ; S. Bose and D. Home, <i>Physical Review Letters</i> 88, 050401(2002).	<b>103</b>

Further, Home's research works and books have been cited in the following **20** books:

<b>Book</b>	<b>Name of the Author / Editor</b>	<b>Year of publication</b>	<b>Publisher</b>	<b>Page No.</b>
1. Charged Particle Traps II: Applications	Günther Werth, Viorica N. Gheorghe, F. G. Major	2009	Springer	266
2. The Road to Reality	R. Penrose	2004	Jonathan Cape, London	1064
3. Seeking Ultimates – An Intuitive Guide to Physics	P. T. Landsberg	2000	Institute of Physics Publishing, Bristol	126, 178
4. The Einstein - Podolsky - Rosen Paradox in Atomic, Nuclear and Particle Physics	A. Afriat and F. Selleri	1999	Plenum, New York	192, 193, 242

5. Quantum Dialogue: The Making of a Revolution	M. Beller	1999	University of Chicago Press, Chicago	343
6. Decoherence and Quantum Measurements	M. Namiki, S. Pascazio and H. Nakazato	1997	World Scientific, Singapore	217
7. Interpreting the Quantum World	J. Bub	1997	Cambridge University Press, Cambridge	70
8. Encyclopaedia Britannica Book of the year 1996	Edited by G. M. Edwards	1996	Encyclopaedia Britannica Inc. Chicago	242-243
9. Einstein, Bohr and Quantum Dilemma	A. Whitaker	1996	Cambridge University Press, Cambridge	211, 311, 312, 330, 335, 336
10. Bohmian Mechanics and Quantum Theory: An Appraisal	Edited by J. Cushing, A. Fine and S. Goldstein	1996	Kluwer, Dordrecht	99
11. Schroedinger's Kittens	J. Gribbin	1995	Weidenfeld and Nicolson, London	118, 120
12. Veiled Reality: An Analysis of Present-Day Quantum Mechanical Concepts	B. d'Espagnat	1995	Addison-Wesley Massachusetts	201, 215, 297, 298, 308, 348
13. Shadows of the Mind	R. Penrose	1994	Oxford University Press, Oxford	435
14. Quantum Mechanics, Historical Contingency and the Copenhagen Hegemony	J. T. Cushing	1994	University of Chicago Press, Chicago	224, 226, 232

15. What is Reality?	G. Venkataraman	1994	Universities Press Hyderabad	82, 85-87, 90, 91
16. Quantum Theory: Concepts and Methods	A. Peres	1993	Kluwer, Dordrecht	416
17. The Quantum Theory of Motion	P. R. Holland	1993	Cambridge University Press, Cambridge	14, 249
18. Continuous Quantum Measurements and Path Integrals	M. B. Mensky	1993	Institute of Physics Publishing, Bristol	17
19. The Aharonov- Bohm Effect	M. Peshkin and A. Tonomura	1990	Springer- Verlag, Berlin	161
20. Microphysical Reality and Quantum Formalism	F. Selleri	1988	Kluwer, Dordrecht	319

**A Complete List of Research Publications of Dipankar Home**  
(in peer-reviewed Journals and invited articles in Books)

Listed sequentially from the recent to the earlier ones, *not* in the order of significance:

1. *Quantum mechanical violation of macrorealism for large spin and its robustness against coarse-grained measurements*; S. Mal, D. Das and D. Home, *Physical Review A* 94, 062117 (2016).
2. *Manifestation of pointer-state correlations in complex weak values of quantum observables*; S. Kanjilal, G. Muralidhara and D. Home, *Physical Review A* 94, 052110 (2016).
3. *Sharing of Nonlocality of a Single Member of an Entangled Pair of Qubits Is Not Possible by More than Two Unbiased Observers on the Other Wing*; S. Mal, A. S. Majumdar and D. Home; Special Issue “*Mathematics of Quantum Uncertainty*”- *Mathematics* 4, 48 (2016).



4. *Duality in Entanglement tested with Bell Measurements; I. P. Degiovanni, E. Moreva, M. Gramegna, M. Genovese, S. Bose, D. Home, and G. Brida; in Conference on Lasers and Electro-Optics, OSA Technical Digest (Optical Society of America,) JTU5A.27 ( 2016).*
5. *Facets of the Leggett-Garg inequality: some recent studies; D. Home, Current Science 109, 1980 (2015).*
6. *Effect of quantum statistics on the gravitational weak equivalence principle; S. V. Mousavi, A. S. Majumdar and D. Home, Classical and Quantum Gravity 32, 215014 (2015).*
7. *Bell measurements as a witness of a dualism in entanglement; E. Moreva, G. Brida, M. Gramegna, S. Bose, D. Home and M. Genovese, Physical Review A 91, 062117 (2015).*
8. *Toward secure communication using intra-particle entanglement; S. Adhikari, D. Home, A. S. Majumdar, A. K. Pan, A. Shenoy H. and R. Srikanth, Quantum Information Processing 14, 1451 (2015).*
9. *Wigner's form of the Leggett-Garg inequality, No-Signaling-in-time condition, and unsharp measurement; D. Saha, S. Mal, P. K. Panigrahi and D. Home, Physical Review A 91, 032117 (2015).*
10. *Multipartite Bell-type Inequality by Generalizing Wigner's Argument; D. Home, D. Saha and S. Das, Physical Review A 91, 012102 (2015).*
11. *Unification of Bell, Leggett-Garg and Kochen-Specker inequalities: Hybrid spatio-temporal inequalities; S. Das, S. Arvinda, R. Srikanth and D. Home, Europhysics Letters 104, 60006 (2013).*
12. *Duality in Entanglement Enabling a Test of Quantum Indistinguishability Unaffected by Interactions; S. Bose and D. Home, Physical Review Letters 110, 140404 (2013).*
13. *Probing the Leggett-Garg inequality for oscillating neutral kaons and neutrinos; D. Gangopadhyay, D. Home and A. Sinha Roy, Physical Review A 88, 022115 (2013).*
14. *Reexamining Larmor precession in a spin-rotator: Testable correction and its ramifications; D. Home, A. K. Pan and A. Banerjee, The European Physical Journal D 67, 72 (2013).*
15. *Reply to Comment on 'Quantitative probing of the quantum-classical transition for the arrival time distribution'; D Home, A. K. Pan and A. Banerjee, Journal of Physics A: Mathematical and Theoretical 46, 208002 (2013).*

16. *A testable prediction of the no-signalling condition using a variant of the EPR-Bohm example*; D. Home, A. Rai and A. S. Majumdar, ***Physics Letters A*** 337, 540 (2013).
17. *Effect of a transient barrier on wavepacket traversal*; D. Home, A. S. Majumdar and A. Matzkin, ***Journal of Physics A: Mathematical and Theoretical*** 45, 295301 (2012).
18. *Strong quantum violation of the gravitational weak equivalence principle by a non-Gaussian wave-packet*; P. Chowdhury, D. Home, A. S. Majumdar, S. V. Mousavi, M. R. Mozaffari and S. Sinha, ***Classical and Quantum Gravity*** 29, 025010 (2012).
19. *Quantum violation of noncontextuality for separable states using fewer measurement settings*; A. K. Pan and D. Home, ***The European Physical Journal D*** 66, 62 (2012).
20. *Quantum teleportation using non-orthogonal entangled channels*; S. Adhikari, A. S. Majumdar, D. Home, A. K. Pan and P. Joshi, ***Physica Scripta*** 85, 045001 (2012).
21. *Testing non-locality of single photons using cavities*; T. Pramanik, S. Adhikari, A. S. Majumdar and D. Home, ***Physics Letters A*** 376, 344 (2012).
22. *On Empirical Scrutiny of the Bohmian Model Using a Spin Rotator and the Arrival/Transit Time Distribution*; A. K. Pan and D. Home, ***International Journal of Theoretical Physics*** 51, 374 (2012).
23. *Leggett-type nonlocal realist inequalities without any constraint on the geometrical alignment of measurement settings*; A. Rai, D. Home and A. S. Majumdar, ***Physical Review A*** 84, 052115 (2011).
24. *An interplay between nonlocality and quantum violation of path-spin noncontextuality*; D. Home and A. K. Pan, ***International Journal of Quantum Information*** 9, 1279 (2011).
25. *On the Possibility of Empirically Probing the Bohmian Model in Terms of the Testability of Quantum Arrival/Transit Time Distribution*; D. Home and A. K. Pan, in “***Quantum Trajectories***”; edited by P. Chattaraj (CRC Press, Taylor & Francis, 2011).
26. *Quantum mechanical effect of path-polarization contextuality for a single photon*; A. K. Pan and D. Home, ***International Journal of Theoretical Physics*** 49, 1920 (2010).

27. Reply to the “Comments on ‘Contextuality within quantum mechanics manifested in subensemble mean values’”; D. Home and A. K. Pan, *Physics Letters A* **374**, 2195 (2010).
28. Information transfer using a single particle path-spin hybrid entangled state; T. Pramanik, S. Adhikari, A. S. Majumdar, D. Home, and A. K. Pan, *Physics Letters A* **374**, 1121 (2010).
29. Swapping path-spin intraparticle entanglement onto spin-spin interparticle entanglement; S. Adhikari, A. S. Majumdar, D. Home, and A. K. Pan, *Europhysics Letters* **89**, 10005 (2010).
30. Contextuality within quantum mechanics manifested in subensemble mean values; D. Home and A. K. Pan, *Physics Letters A* **373**, 3430 (2009).
31. Dark energy from quantum wave function collapse of dark matter; A. S. Majumdar, D. Home, and S. Sinha, *Physics Letters B* **679**, 167 (2009).
32. Quantitative probing of the quantum–classical transition for the arrival time distribution; D. Home, A. K. Pan and A. Banerjee, *Journal of Physics A: Math. Theor.* **42**, 165302 (2009).
33. Using the no-signaling condition for constraining the nonideality of a Stern-Gerlach set-up; D. Home and A. K. Pan, *Journal of Physics A: Math. Theor.* **42**, 085301 (2009).
34. Quantum transit time distribution, its testability and foundational implications; D. Home and A. K. Pan, in “*Quantum Optics – Coherence, Entanglement and Nonlinear Dynamics*”; edited by J. Banerji, P. K. Panigrahi, and R. P. Singh (Macmillan India, 2008).
35. Reply to “Comment on ‘Quantum time-of-flight distribution for cold trapped atoms’”; M. Ali, D. Home, A. S. Majumdar and A. K. Pan, *Physical Review A* **77**, 026101 (2008).
36. Aspects of nonideal Stern – Gerlach experiment and testable ramifications; D. Home, A. K. Pan, M. Ali and A. S. Majumdar, *Journal of Physics A: Mathematical and Theoretical* **40**, 13975 (2007).
37. Quantum time of flight distribution for cold trapped atoms; M. Ali, D. Home, A. S. Majumdar and A. K. Pan, *Physical Review A* **75**, 042110 (2007).
38. On the quantum analogue of Galileo’s leaning tower experiment; M. Ali, A. S. Majumdar, D. Home, and A. K. Pan, *Classical and Quantum Gravity* **23**, 6493 – 6502 (2006).

39. *Quantum Superarrivals: Bohr's Wave-Particle Duality Revisited*; M. Ali, A. S. Majumdar, and D. Home, ***Foundations of Physics Letters*** 19, 179 (2006).
40. *Observability of the arrival time distribution using spin-rotator as quantum clock*; A. K. Pan, M. Ali and D. Home, ***Physics Letters A*** 352, 296 (2006).
41. *Testing Quantum Statistics with Particles in Distinguishable States*; S. Bose and D. Home, ***International Journal of Quantum Information*** 3, 117 (2005)
42. *Information Transfer and Non-locality for a Tripartite Entanglement using Dynamics*; D. Home and J. Corbett, ***Physics Letters A*** 333, 382 (2004).
43. *Spin-dependent observable effect for Free Particles using the Arrival Time Distribution*; M. Ali, A. S. Majumdar, D. Home and S. Sengupta, ***Physical Review A*** 68, 042105 (2003).
44. *Information Flow and Quantum Cryptography using Statistical Fluctuations*; D. Home and M. A. B. Whitaker, ***Physical Review A*** 67, 022306 (2003).
45. *Generic entangling through quantum indistinguishability*; S. Bose and D. Home, ***Pramana – Journal of Physics*** 59, 229 (2002).
46. *Violation of Bell's inequality in neutral kaons system*; M. K. Samal and D. Home, ***Pramana – Journal of Physics*** 59, 289 (2002).
47. *Understanding Quantum Superarrivals using the Bohmian Model*; M. Ali, A. S. Majumdar and D. Home, ***Physics Letters A*** 304, 61 (2002).
48. *Quantum Information Transfer without An External Chanel*; D. Home and J. Corbett, in ***Proc. 7<sup>th</sup> Int. Symp. on Foundations of Quantum Mechanics in the Light of New Technology ISQM – Tokyo'01***; World Scientific (2002).
49. *Quantum Information Transfer Using A Time-Dependent Boundary Condition*; D. Home and A. S. Majumdar; in ***Proc. 7<sup>th</sup> Int. Symp. on Foundations of Quantum Mechanics in the Light of New Technology ISQM – Tokyo'01***; World Scientific (2002).
50. *Generic Entanglement Generation, Quantum Statistics, and Complementarity*; S. Bose and D. Home, ***Physical Review Letters*** 88, 050401 (2002).
51. *Quantum-Mechanical Effects in a Time-varying Reflection Barrier*; S. Bandyopadhyay, A. S. Majumdar and D. Home, ***Physical Review A*** 65, 052718 (2002).
52. *Interpreting the Measurement of the Time of Decay: Phenomenological Significance of the Bohm Model*; A. S. Majumdar and D. Home, ***Physics Letters A*** 296, 176 (2002).
53. *Quantum superarrivals and information transfer through a time varying boundary*; D. Home and A. S. Majumdar, ***Pramana – Journal of Physics*** 59, 321 (2002).

54. *Bell's inequality for a single spin-1/2 particle and Quantum Contextuality*; S. Basu, S. Bandyopadhyay, G. Kar and D. Home, ***Physics Letters A*** 279, 281 (2001).
55. *Facets of Tripartite Entanglement, in Foundations of Quantum Theory and Quantum Optics*; D. Home, ***Pramana – Journal of Physics*** 56, 179 (2001).
56. *Quantum Effects involving Interplay between Unitary Dynamics and Kinematic Entanglement*; D. Home and J. Corbett, ***Physical Review A*** 62, 062103 (2000).
57. *On the Importance of the Bohmian Approach for Interpreting CP Violation Experiments*; D. Home and A. S. Majumdar, ***Foundations of Physics*** 29, 721 (1999).
58. *Quantum Zeno Effect: Relevance for Local Realism, Macroscopic Realism, and Non-invasive Measurability at the Macroscopic Level*; D. Home and M.A.B. Whitaker, ***Physics Letters A*** 239, 6 (1998).
59. *Response to “Comment on DNA Molecular Cousin of Schrödinger’s Cat: A Curious Example of Quantum Measurement”*; D. Home and R. Chattopadhyaya, ***Physical Review Letters*** 80, 1349 (1998).
60. *Comment on Why Quantum Mechanics Cannot be formulated as a Markov Process*; L. Hardy, D. Home, E. J. Squires and M. A. B. Whitaker, ***Physical Review A*** 56, 3301 (1997).
61. *A Conceptual Analysis of Quantum Zeno; Paradox, Measurement and Experiment*; D. Home and M. A. B. Whitaker, ***Annals of Physics*** 258, 237 (1997).
62. *Collapse-Induced Quantum Nonlocal Effect*; D. Home and G. Kar, ***Foundations of Physics*** 27, 1765 (1997).
63. *Testing a Dynamical Model of Wavefunction Collapse in the Cosmological Scenario*; D. Home and A.S. Majumdar, in ***Quantum Coherence and Decoherence***; edited by K. Fujikawa and Y. A. Ono (Elsevier, 1996).
64. *Is Spontaneous Localization Compatible with the Energy density of the Universe?*; A. S. Majumdar and D. Home, ***Physics Letters A*** 220, 17 (1996).
65. *The Two-Prism Experiment and Wave Particle Duality of Light*; P. Ghose and D. Home, *Invited Contribution to the Special Issue of Foundations of Physics in honour of Max Jammer* 26, 943 (1996).
66. *Standard Quantum Mechanics with Environment-Induced Decoherence and Wavefunction Collapse: Possibility of an Empirical Discrimination Using Neutron Interferometry*; D. Home and S. Bose, ***Physics Letters A*** 217, 209 (1996).
67. *DNA Molecular Cousin of Schrödinger’s Cat: A Curious Example of Quantum Measurement*; D. Home and R. Chattopadhyaya, ***Physical Review Letters*** 76, 2836 (1996).

68. *The inadequacy of Effective Incoherence Interpretations of Quantum Theory, as demonstrated by analysis of EPR Measurements*; D. Home and M. A. B. Whitaker, **Physics Letters A** 211, 5 (1996).
69. *Incompatibility between Quantum Mechanics and Classical Realism in the Strong Macroscopic Limit*; D. Home and A. S. Majumdar, **Physical Review A** 52, 4959 (1995).
70. *Quantum Nonlocality of Single Photon States*; D. Home and G. S. Agarwal, **Physics Letters A** 209, 1 (1995).
71. *An Analysis of the Aharonov-Anandan-Vaidman Model*; P. Ghose and D. Home, **Foundations of Physics** 25, 1105 (1995).
72. *Quantum Mechanical Interference and Indistinguishability in Nuclear Orbiting Reactions*; A. Ray and D. Home, **Physics Letters A** 204, 87 (1995).
73. *On Boson Trajectories in the Bohm Model*; P. Ghose and D. Home, **Physics Letters A** 191, 362 (1994).
74. *Position and Contextuality in Bohm's Causal Completion of Quantum Mechanics*; D. Home, **Physics Letters A** 190, 353 (1994).
75. *Wave Function Collapse as a Nonlocal Quantum Effect*; D. Home and R. Nair, **Physics Letters A** 187, 224 (1994).
76. *Parameter Dependence in the EPR-Bohm Type Experiment*; D. Home and M. A. B. Whitaker, **Physics Letters A** 187, 227 (1994).
77. *Simultaneously Sharp Wave and Particle-Like Property of Single Photon States in a Two-Prism Experiment*; P. Ghose and D. Home in: **Recent Developments in Quantum Optics**, edited by R. Inguva (Springer, 1993) 43 – 46.
78. *Non-Classical Interference and Which Path Information in a Gamma Angular Correlation Experiment Using a Heavy-Ion Orbiting Reaction*; A. Ray and D. Home, **Physics Letters A** 178, 33 (1993).
79. *Relativistic quantum mechanics of bosons*; P. Ghose, D. Home and M. N. Sinha Roy, **Physics Letters A** 183, 267 (1993).
80. *Comment on Computational Approach to the Quantum Zeno Effect*; D. Home and M. A. B. Whitaker, **Physical Review A** 48, 2502 (1993).
81. *A New Theorem on Quantum Nonlocality*, D. Home, **Vistas in Astronomy** 37, 269-272 (1993).
82. *Interrupted Fluorescence Experiments and Hidden Variables*; D. Home and M. A. B. Whitaker, **Physics Letters A** 181, 114 (1993).
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