

LIST OF PUBLICATIONS
(Claus Kiefer)

1. BOOKS – Author

1. *Decoherence and the Appearance of a Classical World in Quantum Theory*, Springer, Berlin (1996). Second edition 2003.
(with E. Joos, H. D. Zeh, D. Giulini, J. Kupsch, and I.-O. Stamatescu)
2. *Quantentheorie*, S. Fischer, Frankfurt am Main (2002). Third edition 2004.
3. *Gravitation*, S. Fischer, Frankfurt am Main (2003).
4. *Quantum Gravity*, Oxford University Press, Oxford (2004). Third edition 2012.
5. *Der Quantenkosmos*, S. Fischer, Frankfurt am Main (2008). Third edition 2009.
6. Editor of: *A. Einstein, B. Podolsky, N. Rosen: Kann die quantenmechanische Beschreibung der physikalischen Realität als vollständig betrachtet werden?*, Klassische Texte der Wissenschaft (Springer Spektrum, Berlin, 2015).
7. Editor of: *A. Einstein, B. Podolsky, N. Rosen: Can Quantum-Mechanical Description of Physical Reality Be Considered Complete?*, Classic Texts in the Sciences (Springer, Cham, 2022).
8. *Gravitationswellen* (Springer Spektrum, Wiesbaden, 2017).
(with D. Giulini)

2. Books - Editor

9. *Black Holes: Theory and Observation*, Lecture Notes in Physics 514, Springer, Berlin (1998).
(joint editor with F.W. Hehl and R. Metzler)

10. *Decoherence: Theoretical, Experimental, and Conceptual Problems*,
Lecture Notes in Physics 538, Springer, Berlin (2000).
(joint editor with P. Blanchard, D. Giulini, E. Joos, and I.-O. Stamatescu)
11. *Quantum Gravity: From Theory to Experimental Search*,
Lecture Notes in Physics 631, Springer, Berlin (2003).
(joint editor with D. Giulini and C. Lämmerzahl)
12. *Proceedings, 7th International Workshop : Spacetime - Matter - Quantum Mechanics. (DICE2014) : Castiglioncello, Tuscany, Italy, September 15-19, 2014, Journal of Physics, Conference Series, 626* (2015).
(joint editor with H. T. Elze, L. Diósi, L. Fronzoni, J. J. Halliwell, E. Prati, and G. Vitiello)
13. *Proceedings, 8th International Workshop : Spacetime - Matter - Quantum Mechanics. (DICE2016) : Castiglioncello, Tuscany, Italy, September 12-16, 2014, Journal of Physics, Conference Series, 880* (2017).
(joint editor with H. T. Elze, L. Diósi, L. Fronzoni, J. J. Halliwell, E. Prati, and G. Vitiello)
14. *Proceedings, 9th International Workshop : Spacetime - Matter - Quantum Mechanics. (DICE2018) : Castiglioncello, Tuscany, Italy, September 17-21, 2018, Journal of Physics, Conference Series, 1275* (2019).
(joint editor with H. T. Elze, M. Blasone, L. Diósi, L. Fronzoni, J. J. Halliwell, E. Prati, and G. Vitiello)
15. *One Hundred Years of Gauge Theory*,
Fundamental Theories of Physics, Volume 199 (Springer, Cham, 2020).
(joint editor with S. De Bianchi)
16. *From Quantum to Classical*,
Fundamental Theories of Physics, Volume 204 (Springer, Cham, 2022).

3. REVIEWS

17. Kosmologische Grundlagen der Irreversibilität,
Physikalische Blätter **49**, 1027–1029 (1993).
18. The semiclassical approximation to quantum gravity,
in: *Canonical gravity: From classical to quantum*, edited by J. Ehlers and H. Friedrich (Springer, Berlin, 1994), pp. 170–212.

19. Das Informationsproblem bei Schwarzen Löchern,
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20. Quanteneigenschaften Schwarzer Löcher,
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22. Decoherence: Concepts and Examples,
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(with E. Joos)
23. Thermodynamics of black holes and Hawking radiation,
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24. Conceptual issues in quantum cosmology,
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25. On the interaction of mesoscopic quantum systems with gravity,
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(with C. Weber)
26. Einstein und die Folgen, Teil I,
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27. Einstein und die Folgen, Teil II,
Physik in unserer Zeit **36** (March), 70–74 (2005).
28. Quantum gravity: General introduction and recent developments,
Annalen der Physik **15**, 129–148 (2006).
29. Quantum Cosmology,
e-Print: arXiv:0804.0672 [gr-qc].
(with B. Sandhöfer)
30. Wege zu einer Vereinheitlichung von Gravitation und Quantentheorie,
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31. Auf dem Weg zur Quantengravitation,
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35. *Lexikon der Physik* (Spektrum, Heidelberg, 1998ff.):
Entries on “Dekohärenz, Irreversibilität, Mixmaster-Kosmologie, Quantengravitation, Quantenkosmologie, Schwarze Löcher, Supergravitation, verschränkte Zustände, Vielweltentheorie, Wheeler-DeWitt-Gleichung, Wigners Freund, Zeitpfeil, Zustandsreduktion”.
36. Path integrals in quantum cosmology,
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37. Zeitpfeil,
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38. On the interpretation of quantum theory – from Copenhagen to the present day,
in: *Time, Quantum and Information*, edited by L. Castell and O. Ischebeck (Springer, Berlin, 2003), pp. 291–299.
39. Quantengravitation,
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40. Why quantum gravity?,
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43. Quantum gravity (general) and applications,
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44. Can the Arrow of Time be understood from Quantum Cosmology?
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47. Time in Quantum Gravity,
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48. Quantengravitation,
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49. Weizsäckers Zeitbegriff aus heutiger Sicht,
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50. Quantum Gravity,
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51. Die Rolle der Zeit in der Kosmologie,
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52. Ist die Natur unscharf? Die Rolle der Quantenphysik,
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53. Notes on semiclassical Weyl gravity,
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(Springer, Berlin, 2017), pp. 127–143.
(with B. Nikolić)
54. Ist das Universum endlich oder unendlich? Die Rolle der Quantenthe-
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55. Space, Time, Matter in Quantum Gravity,
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56. The impact of Friedmann’s work on cosmology,
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tersburg and their theorems*, edited by N. Kalinin.
(with H. Nicolai)

5. REFEREED ARTICLES

57. Observation of the comet Stephan-Oterma (1980g) at the Observatory
of Heidelberg,
Minor Planets Circular **5802**, March 1981.
(with U. Görze)
58. On the construction of the U-matrix from Dirac brackets,
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59. Dirac-Bracket formulation of QED in the superaxial gauge: second order formulation,
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(with K.D. Rothe)
60. Continuous measurement of minisuperspace variables by higher multi-poles,
Classical and Quantum Gravity **4**, 1369–1382 (1987).
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63. Non-minimally coupled scalar fields and the initial value problem in quantum gravity,
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64. Quantum gravity and Brownian motion,
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65. Wave packets in quantum cosmology and the cosmological constant,
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69. Quantum gravitational corrections to the functional Schrödinger equation,
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(with T. Padmanabhan and T. P. Singh)
71. Functional Schrödinger equation for scalar QED,
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85. Wheeler-DeWitt equation and Feynman diagrams,
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86. Quantum-to-classical transition for fluctuations in the early universe,
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(with D. Polarski and A.A. Starobinsky)
87. Emergence of classicality for primordial fluctuations:
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88. The coherence of primordial fluctuations produced during inflation,
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89. Answer to Question #60. Interference of two independent sources,
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92. Effective action and decoherence by fermions in quantum cosmology,
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(with D. Polarski and A.A. Starobinsky)
95. Robustness and diffusion of pointer states,
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97. Singularity avoidance by collapsing shells in quantum gravity,
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104. Quantum general relativity and Hawking radiation,
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110. Quantum phantom cosmology,
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(with A. O. Barvinsky, A. Yu. Kamenshchik, A. A. Starobinsky, and C. Steinwachs)
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(with M. Krämer)
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(with D. Brizuela, M. Krämer, and S. Robles-Pérez)
150. Singularity avoidance in Bianchi I quantum cosmology, *European Physical Journal C* **79**, 686 (2019).
(with N. Kwidzinski and D. Piontek)

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(with P. Peter)

6. CONTRIBUTIONS TO PROCEEDINGS

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