

Authors' Preface

In this book we have collected, as chapters following the introduction, our basic articles on Bohmian mechanics, which have appeared in the course of the last twenty years in various journals and books as given below. Our hope is that the result is a self-contained presentation of the theory, accessible to mathematicians, physicists, and philosopher of physics with some basic knowledge of quantum mechanics. We have made some very minor revisions of many of the articles in order to reduce redundancy, enhance clarity, and eliminate some errors.

Articles:

- Quantum Equilibrium and the Origin of Absolute Uncertainty. *J. Statist. Phys.* **67**, 843–907 (1992).
- Quantum Equilibrium and the Role of Operators as Observables in quantum theory. *J. Statist. Phys.* **116**, 959–1055 (2004).
- Quantum Philosophy: The Flight from Reason in Science (without D.D. and N.Z). Contribution to *The Flight from Science and Reason*, edited by P. Gross, N. Levitt, and M.W.Lewis, Annals of the New York Academy of Sciences 775, 119-125 (1996). Reproduced with permission of Blackwell Publishing Ltd.
- Seven Steps Towards the Classical World (with V. Allori). *Journal of Optics B* **4**, 482-488 (2002). Reproduced with kind permission of IOP Publishing Ltd.
- On the Quantum Probability Flux Through Surfaces (with M. Daumer). *J. Statist. Phys.* **88**, 967-977 (1997).
- On the Weak Measurement of Velocity in Bohmian Mechanics. *J. Statist. Phys.* **134**, 1023-1032 (2009).
- Topological Factors Derived From Bohmian Mechanics (with J. Taylor and R. Tumulka). *Ann. H. Poincaré* **7**, 791-807 (2006).
- Hypersurface Bohm-Dirac Models (with K. Münch-Berndl). *Physical Review A* **60**, 2729-2736 (1999). Reprinted with permission. Copyright 1999 by the American Physical Society.

- Bohmian Mechanics and Quantum Field Theory (with R. Tumulka). *Physical Review Letters* **93**, 090402 (2004). Reprinted with permission. Copyright 2004 by the American Physical Society.
- Quantum Spacetime without Observers: Ontological Clarity and the Conceptual Foundations of Quantum Gravity (with S. Teufel, without D.D. and N.Z.). In *Physics meets Philosophy at the Planck Scale*, edited by C. Callender and N. Huggett, 275-289. Copyright by Cambridge University Press, 2001. Reproduced with permission.
- Reality and the Role of the Wavefunction (without D.D.).

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Arquata Scrivia

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