

The Transactional Interpretation of Quantum Mechanics

"The transactional interpretation of quantum mechanics is based on the profound insight that quantum theory can be regarded as describing a world of possibility that lies beneath our ordinary experienced world of actuality. This second edition of Ruth Kastner's book develops the idea in important ways relative to the first edition, responding with clarity to objections that have been raised and giving many interesting illustrations of key ideas. A thought-provoking book."

Prof. George Ellis, *University of Cape Town*

"Kastner writes as if she wants the reader to understand what she is saying, not just to be impressed with how smart she must be to understand the material. This is a boon for those who aren't professionals in the field of quantum mechanics. This book provides a sharp description of the interpretation problem within quantum mechanics and a convincing argument that the Relativistic Transactional Interpretation is the correct choice."

Dr. Dean S. Hartley III, *Hartley Consulting, Oak Ridge*

Providing a comprehensive exposition of the transactional interpretation (TI) of quantum mechanics, this book sheds new light on long-standing problems in quantum theory such as the physical meaning of the "Born Rule" for the probabilities of measurement results, and demonstrates the ability of TI to solve the measurement problem of quantum mechanics. It provides robust refutations of various objections and challenges to TI, such as Maudlin's inconsistency challenge, and explicitly extends TI into the relativistic domain, providing new insight into the basic compatibility of TI with relativity and the meaning of "virtual particles." It breaks new ground in approaches to interpreting quantum theory and presents a compelling new ontological picture of quantum reality. This substantially revised and updated second edition is ideal for researchers and graduate students interested in the philosophy of physics and the interpretation of quantum mechanics.

Ruth E. Kastner is a research associate and member of the Foundations of Physics group at University of Maryland, College Park (UMCP). She is the recipient of two National Science Foundation awards for research in time symmetry issues and transactional interpretation, and of a 2021 Research Award from the Alumni Association of the University of Maryland.

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