

An Excellent Addition to Your Library!

Released: March 2011

YinYang Bipolar Relativity: A Unifying Theory of Nature, Agents and Causality with Applications in Quantum Computing, Cognitive Informatics and Life Sciences

Wen-Ran Zhang (Georgia Southern University, USA)

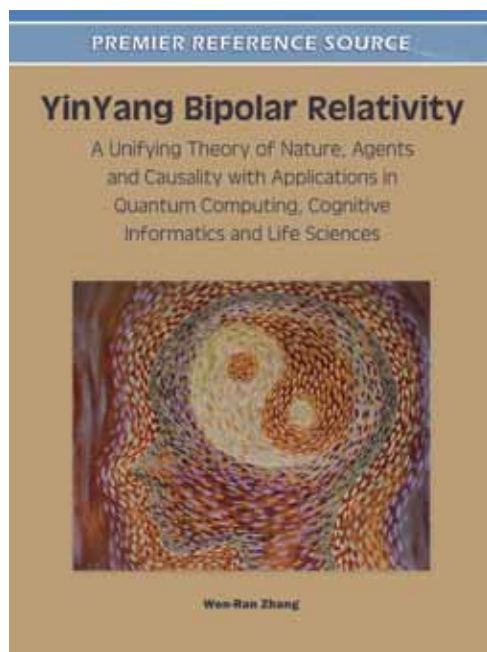
YinYang bipolar relativity can trace its philosophical origins to ancient Chinese YinYang cosmology, which claims that everything has two sides or two opposite, but reciprocal, poles or energies. More specifically, this discipline is intended to be a logical unification of general relativity and quantum mechanics.

YinYang Bipolar Relativity: A Unifying Theory of Nature, Agents and Causality with Applications in Quantum Computing, Cognitive Informatics and Life Sciences presents real-world applications of YinYang bipolar relativity that focus on quantum computing and agent interaction. This unique work makes complex theoretical topics, such as the ubiquitous effects of quantum entanglement, logically comprehensible to a vast audience.

Topics Covered:

- Bipolar axiomatization
- Bipolar fuzzy relations
- Bipolar quantum lattices and I-sets
- Bipolar quantum linear algebra and bipolar quantum cellular automata
- Bipolar sets and YinYang bipolar dynamic logic
- Bipolarity vs. singularity
- Cognitive mapping, mind reading and quantum mind
- Equilibrium-based computational neuroscience and psychiatry
- Spacetime relativity and quantum theory

Market: This premier publication is essential for all academic and research library reference collections. It is a crucial tool for academicians, researchers, and practitioners and is ideal for classroom use.



ISBN: 9781609605254; © 2011; 436 pp.

Print: US \$180.00 | Perpetual: US \$255.00 | Print + Perpetual: US \$360.00

Wen-Ran Zhang obtained his Ph.D. degree in Electrical and Computer Engineering from the University of South Carolina - Columbia in 1986. Since 2001, he has been a professor of computer science, Georgia Southern University, Statesboro, GA. Before then, he had been on the faculty of computer science at the University of North Carolina - Charlotte, NC (1986-1988), Victoria University of Wellington, NZ (1988-1990), and Lamar University, Texas (1990-2001). Professor Zhang's major research areas include agent interaction and coordination, multiagent data mining, cognitive mapping, bipolar neurobiological modeling, bipolar sets and YinYang bipolar dynamic logic, YinYang-N-Element Cellular Automata, YinYang bipolar relativity and quantum gravity, quantum computing, and communication. He proposed the use of multiagent data warehousing (MADWH) and multiagent data mining (MADM) for brain modeling and neurofuzzy control; he pioneered research in equilibrium-based YinYang bipolar sets, bipolar fuzzy sets, and bipolar dynamic logic (BDL); he developed equilibrium relations for bipolar cognitive mapping and decision support; he pioneered research in bipolar linear algebra and bipolar cellular networks for biosystem simulation and regulation. In recent years he developed the theory of YinYang bipolar relativity and bipolar quantum entanglement. Central in Professor Zhang's research result is YinYang Bipolar Universal Modus Ponens (BUMP). For the first time, BUMP leads to logically definable causality and quantum entanglement from a mathematical physics or biophysics perspective. For the first time, it resulted in a minimal but most general equilibrium-based axiomatization of physics. For the first time, it brings the ubiquitous effects of quantum entanglement into the real world of macroscopic and microscopic agent interactions in quantum computing, cognitive informatics, and life sciences. His pioneering works are documented in more than 80 of his authored or co-authored academic publications in refereed journals and conference proceedings. Professor Zhang enjoys teaching, research, and quiet life. He serves on the editorial board of IJFIPM. He has served on a number of program committees of international conferences and workshops. He served as Panel Chair of IEEE ICDM-2005. He has served as an invited referee for the British Engineering and Physical Sciences Research Council. He has served as a reviewer for many journals. In 2008, he received The Outstanding Research Award from The College of Information Technology at Georgia Southern University, Statesboro, GA. He received Award for Teaching Excellence twice from Lamar University, Beaumont, TX, in 1995 and 1997, respectively.

Section 1: Introduction and Background

Chapter 1
Introduction:

Chapter 2
Background Review:

Section 2: Set Theoretic Foundation

Chapter 3
Bipolar Sets and YinYang Bipolar Dynamic Logic (BDL)

Chapter 4
Bipolar Quantum Lattice and Dynamic Triangular Norms

Chapter 5
Bipolar Fuzzy Sets and Equilibrium Relations

Section 3: YinYang Bipolar Relativity and Bipolar Quantum Computing

Chapter 6
Agents, Causality, and YinYang Bipolar Relativity

Chapter 7
YinYang Bipolar Quantum Entanglement:

Chapter 8
Bipolar Quantum Linear Algebra (BQLA) and Bipolar Quantum Cellular Automata (BQCA)

Section 4: Applications

Chapter 9
YinYang Bipolar Quantum Bioeconomics for Equilibrium-Based Biosystem Simulation and Regulation

Chapter 10
MentalSquares:

Chapter 11
Bipolar Cognitive Mapping and Decision Analysis:

Section 5: Discussions and Conclusions

Chapter 12
Causality is Logically Definable:

Order Your Copy Today!

Name: _____

Organization: _____

Address: _____

City, State, Zip: _____

Country: _____

Tel: _____

Fax: _____

E-mail: _____

Enclosed is check payable to IGI Global in
US Dollars, drawn on a US-based bank

Credit Card Mastercard Visa Am. Express

3 or 4 Digit Security Code: _____

Name on Card: _____

Account #: _____

Expiration Date: _____