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论文

变值测量结构及其可视化统计分布

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摘要：

利用测量计算模型和系统化参量统计方法模拟双态量子交互作用系统,在多种交互作用模式下模拟双路量子干涉测量的统计分布效应.从量子交互作用出发,对Einstein受激发射,Mach-Zehnder干涉仪和Stern-Gerlach自旋测量等测量模式形成测量四元组.利用多变量逻辑函数和变值原理,在N元0-1输入/输出序对上形成变值测量四元组,建立变值双路模拟模型.变值模型根据:概率、同步/异步、对称/反对称等不同组合条件特征输出统计分布结果,形成2组8个统计直方图.

关键词： 量子交互作用 波粒二重性 对称/反对称分布 测量参量四元组

Variant Measures and Visualized Statistical Distributions

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Abstract:

Using measure model and statistical approches to simulate quantum interaction on binary level systems,multiple interactive conditions are simulated via double path interference measures.From quantum interaction,Einstein,Mach-Zehnder,Stern-Gerlach and CHSH measuring parameters are investigated.Using multiple variable logic functions and variant principle,N bit vectors of 0-1 input/output pairs form variant quaternion to establish variant double path simulation model.Using probability,symmetry/anti-symmetry,sychronous/asychronous conditions,simulation system generates two groups of eight histograms to express their statistical distributions in relevant conditions.

Keywords: Quantum interaction Wave particle duality Symmetry/anti-symmetry Measurement quaternion

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参考文献：

[1]BARROW J D.Science and ultimate reality:quantum theory,cosmology and complexity [M].Cambridge:Cambridge University Press,2004.
[2]HAWKING S,MLODINOW L.The grand design[M].USA:Bantam Books,2010.
[3]张礼,葛墨林.量子力学的前沿问题[M].北京:清华大学出版社,2000.
[4]PENG Heng-wu.The birth and growth of quantum theory from quantum hypothesis to quantum mechanics[J].Physics,2001(5):265-270.
彭恒武.量子理论的诞生和发展—从量子论到量子力学[J].物理,2001（5）:265-270.
[5]赵凯华,罗蔚茵.量子物理-新概念物理教程[M].北京:高等教育出版社,2008.

[6]张永德.量子信息物理原理[M].科学出版社,2009.

[7]FEYNMAN R,LEIGHTON R B,SANDS M.The feynman lectures on physics Vol 3[M].New Jersey:Addison-Wesley,1963.

[8]BELL J S.Speakable and unspeakable in quantum mechanics[M].Cambridge:Cambridge University Press,1987.

[9]CLAUSER F,HORNE M,SHIMONY A,et al.Proposed experiment to test local hidden-variable theories [J].Physical Review Letters,1969,23(15):880.

[10]ASPECT A,DALIBARD J,ROGER G.Experimental test of bell′s inequalities using time- varying analyzers[J].Physical Review Letters,1982,49(25):1804-1807.

[11]HORNE M,SHIMONY A,ZEILINGER A.Two-particle interferometry[J].Nature,1990,347:429-430.

[12]ASPECT A.Bell′s theorem:the naive view of an experimentalist,quantum[Un]speakables - from bell to quantum information[M].Springer,2002.

[13]NAIRZ O,ARNDT M,ZEILINGER A.Quantum interference experiments with large molecules [J].American Journal of Physics,2003,71(4):319-325.

[14]LI Yuan-hua,LIU Jun-chang,NIE Yi-you.Quantum information splitting by using a genuinely entangled six-qubit state and bell-state measurements[J].Acta Photonica Sinica,2011,40(2):307-310. 李渊华,刘俊昌,聂义友.基于六粒子纠缠态和Bell态测量的量子信息分离[J].光子学报,2011,40(2):307-310.

[15]LIN Ji-cheng,ZHENG Xiao-hu,CAO Zuo-liang.Statistic properties of photon in the system of the two-mode entangled coherent field interacting with atoms in bell states[J].Acta Photonica Sinica,2007,36 (6):1156-1161. 林继成,郑小虎,曹卓良.双模纠缠相干光与Bell态原子系统的光子统计[J].光子学报,2007,36(6):1156-1161.

[16]ZHONG Feng,YU Li-zhi,LI Chun-shu.Quantum teleportation with linear cluster-class state[J].Acta Photonica Sinica,2010,39(10):1800-1805. 钟锋,于立志,李春树.量子隐形传态的类簇态信道方案[J].光子学报,2010,39(10):1800-1805.

[17]ZHENG J,ZHENG C,KUNII T L.A framework of variant-logic construction for cellular automata,cellular automata-innovative modelling for science and engineering[M].In Tech Press,2011:325-352.

[18]ZHENG J,ZHENG C.A framework to express variant and invariant functional spaces for binary logic,Frontiers of Electrical and Electronic Engineering in China[J].Higher Education Press and Springer,2010,5(2):163-172.

[19]LI Qing-ping,ZHENG J.2D spatial distributions for measures of random sequences using conjugate maps[C].11th Australian Information Warfare Conference,2010.

[20]LI Qing-ping,ZHENG J.3D visual method for logic functions on exhaustive sequences[C].IEEE International Conference on Information Theory and Information Security,2010:553-557.

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