



## 量子信息科技学术研讨会 (2018.9.17-21)

### 报告

量子计量学进展：量子干涉、相互作用免疫的量子测量和自旋锁定的原子磁力计  
Progress in Quantum Metrology: Quantum Interference, Backaction-free Quantum Measurement, and Spin-locking Atomic Magnetometer

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### 讲者介绍 Biography

张卫平，1989 年获中国科学院上海光学精密机械研究所博士学位。自 1989 年 6 月起，先后为新西兰 Auckland 大学 UGC 基金会博士后，澳大利亚 Macquarie 大学国家 ARC Fellow 与 Lecturer，美国 Arizona 大学光学科学中心研究助理教授与副教授。自 2003 年回国，任职清华大学百人计划特聘教授，华东师范大学终身特聘教授，上海交通大学致远讲席教授。他是教育部长江学者，国家杰出青年科学基金获得者，国家重大科学研究计划 (973 计划) 项目首席科学家，国家重点研发计划项目首席负责人，国务院学位委员会学科组成员，国家自然科学基金委员会数理学部十三五战略规划研究专家组成员，中国物理学会理事，中国物理学会量子光学专业委员会副主任、原子与分子物理专业委员会委员。获 2017 年度饶毓泰物理学奖、2011 年国家十一五科技计划执行突出贡献奖，以及上海市领军人才奖、上海市优秀学科带头人、上海市首届华人华侨专业人士杰出创业奖等称号。2009 年当选美国物理学会 Outstanding Referee, 2014 年当选美国物理学会国际权威物理杂志 Physical Review Letters 学部副主编。在国际一流学术杂志上发表论文 180 余篇，包括国际权威杂志 Physical Review Letters 上 30 篇、Nature Commun. 与 Optica 各 1 篇，专著 1 部。

Professor Weiping Zhang received his PhD from Shanghai Institute of Optics and Fine Mechanics, Chinese Academy of Sciences in 1989, and then became a University Grants Committee postdoctoral fellow in University of Auckland, New Zealand. Starting from 1993, he held an Australian Research Council fellow and assistant professor in Macquarie University, Australia until 2000. He joined the Optical Sciences Center, University of Arizona as an assistant research professor in 2001, and then associate research professor in 2002. In 2003, he was appointed as a BaiRen chair professor in Tsinghua University. He became a university distinguished professor in East China Normal University in 2004. He is currently a Zhiyuan chair professor in Shanghai Jiao Tong University. He also holds a number of titles including the Changjiang Scholar Professorship, the National Outstanding Youth Investigator, the Chief Scientist of the National Basic Research Program (973 Program) and the National Key Research and Development Program. In addition, he is the Discipline-appraisal Panel Member for China State Council Academic Degrees Committee, the Panel Member for National Natural Science Foundation of China, the Council Member of Chinese Physical Society, the Executive Council Member of Atomic and Molecular Physics Society of China and the Vice President of Quantum Optics Society of China. He was awarded the Outstanding Referee in 2009, and selected as the Divisional Associate Editor of Physical Review Letters in 2014 by American Physical Society. He has published 1 book and over 180 papers in the international leading journals including 30 in Physical Review Letters, 1 Nature communications, and 1 Optica.

### 报告摘要 Abstract

量子光学与原子光学正在推动量子计量学的发展。在这个报告中，我们将介绍一些近来我们研究小组在这个研究领域的实验与理论进展，内容包括，两个独立冷原子系综产生的单光子的量子干涉，利用模拟狄拉克振子进行相互作用免疫的量子测量，以及发展自旋锁定的原子磁力计等。

Quantum optics and atom optics are rapidly developing toward quantum metrology. In this talk we will introduce a number of recent progress in both experiments and theories from our group in these areas, including quantum interference of single photons from two independent cold atomic ensembles, backaction-free quantum measurement with Dirac-like oscillator, and the development of spin-locking technology in atomic magnetometer.