



复旦大学物理系 物质科学报告

Time: 2:00pm, Tuesday, 2018.3.27

Location: Physics Building (Jiangwan), Room C108

Holography, Quantum Information and String Theory

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Holographic Principle asserts an equivalence between quantum systems with objects in gravitational fields in a higher dimensional spacetime. The suggestion of holography originated from the work of Hawking, Bekenstein and others on the quantum properties of black holes, and it has been proposed as a fundamental principle of quantum gravity and spacetime by 't Hooft and Susskind. One of the remarkable progresses of string theory in the last twenty years is the realization of this principle in terms of the AdS/CFT correspondence. In this colloquium, I will talk about how developments in string theory has contributed to the understanding of this principle.

Recently an intriguing connection between quantum entanglement and microscopic degrees of freedom in a quantum theory and geometric properties of spacetime in the gravitational theory has been pointed out. This surprising perspective has led to new insights in the understanding of quantum information, and its relation with holography and the nature of spacetime. I will highlight some of these recent progress as well.



个人简介:

朱创新博士现任清华大学(台湾)物理学教授,清华大学(台湾)讲座教授,及国家理论科学中心物理部主任。

朱博士出生于香港。获香港中文大学物理学学士学位,加州大学伯克利分校博士学位。他曾任职意大利的国际高级研究所,瑞士 Neuchatel 理论研究所。2000年加入英国 Durham 大学,任教数学系至 2014 年。

朱博士的研究兴趣在高能物理和宇宙学的根本问题,并曾在很多课题中做出贡献,如非交换几何的起源问题,宇宙学, Ads/CFT, M-branes 等,最近他兴趣集中在有趣的量子信息与全息原理之间的关系。

朱博士曾在瑞士欧洲核子研究中心,德国马克斯普朗克任职,曾在英国 Issac Newton 研究所,加拿大 Perimeter 研究所和日本 KEK 长期访问。他是英国 EPSRC 高级研究员,英国物理学会会士,高等教育研究所会士,及台湾 2011 年度杰出人才讲座教授。

