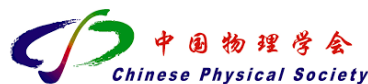




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Quantum entanglement and beyond



Professor Jian-Wei Pan
University of Science and Technology of China

Friday, Nov 10, 9pm US Eastern
Friday, Nov 10, 6pm US Pacific
Saturday, Nov 11, 10am in China

Abstract: Quantum information science and technology are emerging, and fascinating technologies are being formed by coherently manipulating individual quantum systems, which enables secure quantum cryptography (quantum communication), super-fast quantum computing (quantum computation), and improving measurement precision (quantum metrology) to beat classical limits.

For fundamental aspect, one is led to the conception of quantum entanglement. The appeared 'spooky action at a distance' phenomena referred by Einstein, is often explained by seemingly reasonable assumptions of "local realism." The inequalities proposed by John Bell and others provide immediate tests for correctness of quantum mechanics. Many efforts are addressing loophole-free tests of Bell inequalities, which tries to close various loopholes, in which some of loopholes are still needed to be addressed including freedom of choice loophole, the collapse locality loophole. Well, the final test is on-going, many developed ground-breaking technologies for coherent manipulation of quantum systems offers elegant and feasible solutions for satisfying increasing needs of computational power and information security (see more on the OCPA website).

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