



# Academic Presentations in Physics

## 物理学系列学术报告

报告题目：关联信道中的量子相干和量子相干非局域优势研究

报告人：胡明亮 教授

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报告地点：长安校区物理楼 852 教室

报告摘要：

The long-time maintenance of quantum coherence is crucial for its application. We report our recent investigation on quantum coherence and nonlocal advantage of quantum coherence (NAQC) for a system traversing a correlated quantum channel. We will show that the decay of coherence can be evidently delayed when the consecutive actions of the channel on the sequence of qubits has some correlations, and provide an explanation for the delayed decoherence by exploring the interplay between the change of the unlocalized quantum coherence and the total correlation gain of the system. Moreover, we obtain analytically the dephasing and memory factors for a Hamiltonian model of correlated dephasing channel which has a Lorentzian spectral density. It is shown that the memory effect of this correlated channel on NAQC are state-dependent, and they suppress noticeably the decay of NAQC for the family of the input Bell-like states with one excitation.



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胡明亮，教授，博导，陕西省青年科技新星。陕西师范大学本科，西安交通大学硕博，中科院物理所博士后。毕业至今在西安邮电大学工作，2012年破格副教授，2015年破格教授。主要从事量子物理和量子信息方面的研究，主持国家自然科学基金项目2项，以第一完成人获陕西省科学技术奖、陕西省自然科学优秀学术论文奖各1项。在 *Physics Reports* 和 *Physical Review A* 等发表SCI论文40篇，SCI引用1150余次，入选ESI热点论文1篇、高被引论文2篇。

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