يژوهشكدهٔ رياضيات



IPM Math Colloquium سخنرانی عمومی

Classical and Quantum Stochastic Processes

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Abstract:

In this talk we briefly review the basic concepts of pure and mixed quantum states in addition to quantum dynamics for closed and open quantum systems. The dynamics of a closed system, is given by unitary evolution, while the dynamics of open quantum system is given by what is known in mathematics, a completely positive trace-preserving (CPT) map. These two respectively generalize deterministic and stochastic dynamics into the quantum domain. We try to elaborate on these analogies, specially in the case of qubit maps where a classification of CPT's is known.

زمان: چهارشنبه ۱۳۹۰/۱۰/۷، ساعت ۱۶:۰۰ الی ۱۷:۰۰ مکان: میدان نیاوران، پژوهشگاه دانشهای بنیادی (مرکز تحقیقات فیزیک نظری و ریاضیات)، سالن شماره ۱