

decoherence and quantum measurements pdf

Quantum decoherence is the loss of quantum coherence. In quantum mechanics, particles such as electrons are described by a wave function, a mathematical description of the quantum state of a system; the probabilistic nature of the wave function gives rise to various quantum effects. As long as there exists a definite phase relation between different states, the system is said to be coherent.

Quantum decoherence - Wikipedia

An interpretation of quantum mechanics is an attempt to explain how the mathematical theory of quantum mechanics corresponds to reality. Although quantum mechanics has held up to rigorous and extremely precise tests in an extraordinarily broad range of experiments, there exist a number of contending schools of thought over their interpretation.

Interpretations of quantum mechanics - Wikipedia

November 13, 2012 1:19 WSPC - Proceedings Trim Size: 9.75in x 6.5in solvay-preskill-2011-arXiv-v3 5 probability is the square of an amplitude. By simulating a quantum walk on a graph,

arXiv:1203.5813v3 [quant-ph] 10 Nov 2012

Researchers throughout the world are struggling to build quantum computers. One of the great challenges is to overcome the sensitivity of quantum systems to decoherence, the collapse of ...

Unconventional superconductor may be used to create

Quantum mechanics (QM) is the part of physics that tells how the things that make up atoms work. QM also tells how electromagnetic waves (like light) work. It is also called "quantum physics" or "quantum theory". QM is a mathematical framework (rules written in maths) for much of modern physics and chemistry. Quantum mechanics helps make sense of the smallest things in nature like protons ...

Quantum mechanics - Simple English Wikipedia, the free

Utilizing the tools of quantum optics to prepare and manipulate quantum states of motion of a mechanical resonator is currently one of the most promising routes to explore nonclassicality at a macroscopic scale.

Annalen der Physik: Vol 527, No 1-2 - onlinelibrary.wiley.com

We propose a protocol for quantum state tomography of nonclassical states in optomechanical systems. Using a parametric drive, the procedure overcomes the challenges of weak optomechanical coupling, poor detection efficiency, and thermal noise to enable high efficiency homodyne measurement.

Quantum Physics authors/titles "new" - arXiv

The Many-Worlds Interpretation (MWI) of quantum mechanics holds that there are many worlds which exist in parallel at the same space and time as our own. The existence of the other worlds makes it possible to remove randomness and action at a distance from quantum theory and thus from all physics ...

Many-Worlds Interpretation of Quantum Mechanics (Stanford

Quantum theorists have shown that decoherence gives rise to the kind of behavior seen in classical physics. And experimentalists have proved it in experiments that can control the rate of decoherence, where the characteristic quantum effects such as wavelike interference of particles gradually vanish as decoherence proceeds.. Decoherence, then, is central to the current understanding of the ...

Real-Life Schrödinger's Cats Probe the Boundary of the

The quantum wave function is moving in hidden extradimensions of space-time with speed, which exceeds the speed of light. There are the phase waves, of which we understand the EM variety.

