

Quantum computers are a delusion - Feynman's joke

Steven Meyer

Tachyon Design Automation, Boston, MA 02111
smeyer@tdl.com

Presented May 02, 2017 at Eurocrypt Rump Session Paris
France

Slides posted on my web page www.tdl.com/~smeyer

Background

1. The idea for quantum computers (QC) comes from Richard Feynman's book **Feynman lectures on computation**.
Feynman was speculating on the connection between Hilbert's formalism programme that physicists especially John von Neumann had rejected since that late 1930s.
2. The physicist joke of QCs is not seen as joke in some circles.
3. I believe it is a joke because of the 1987 book **Quantum Implications: Essays in Honour of David Bohm**.
Feynman's negative probability joke set the tone for various humorous essays.
4. Feynman and David Bohm came up with Bohm's **Causality and Chance in Modern Physics** to defend the de Broglie Bohm pilot wave QM theory from discussions in Brazil after Bohm's pilot wave theory was rejected mostly for political reasons in the early 1950s.

New QM Theory Coming

1. There have been a number of physicists arguing that the current QM standard model based on Von Neumann Birkoff quantum logic needs to be replaced.
2. Steven Weinberg published article “The Trouble with QM” in New York Review of books.
3. Roger Penrose recent book **Fashion, Faith and Fantasy in Modern Physics** criticizes QM and eliminates multiple dimension repair of QM using too many degrees of freedom arguments.
4. Grete Herman’s 1930s disproof of quantum logic now subject of renewed studies.
5. Von Neumann’s rejection of his 1920 mathematical formalization of QM (proof that no hidden variables could exist) is now clear from historical studies mostly published in the last 10 years.

What happens to QC building when entanglement replaced

1. de Broglie Bohm pilot wave theory has recent experimental proof. Experiments have been ignored so far.
2. Entanglement is a philosophical not physical idea.
 - 2.1 Bohm's example (paraphrased): Two people get together in Boston and tear a 10 dollar bill in half. One then goes to Tokyo. The ten dollar bills are entangled by their same edge tear pattern.
 - 2.2 Feyerabend's example: If the standard one kilogram metal bar is changed in Paris, mass of everything changes immediately because they are entangled.
3. Feyerabend in letters to Imre Lakatos (in Lakatos Archive) showed that the Bell inequality that is used to prove entanglement depends on the assumptions of Birkhoff von Neumann quantum logic.
4. Why should one expect an entanglement computer to consist of bits (qubits) at all.

From Einstein's "Lecture on Geometry", 1921

"This view of axioms, advocated by modern axiomatics, purges mathematics of all extraneous elements, and thus dispels the mystic obscurity, which formerly surrounded the basis of mathematics. But such an expurgated exposition of mathematics makes it also evident that mathematics as such cannot predicate anything about objects of our intuition or real objects."