

What on earth does an abstract quantum computer mean ?

Man-Duen Choi *

choi@math.utoronto.ca

Can abstract theory of quantum mechanics be compatible with high tech of quantum control, leading to the construction of real quantum computers ? Here, I will look into the down-to-earth structure of quantum channels, from the view point of a pure mathematician. In particular, I need to re-examine my old paper (Completely positive linear maps on complex matrices, *Linear Algebra Appl.* 10 (1975), pp. 285-290) which has been cited in more than 700 research articles in Quantum Information (as shown in Google Scholars of November 2011).

Personally, I am fond of Foundation of Quantum Mechanics with flavors in philosophy and logic. By all means, I want to realize the new meanings of the old values, as well as to seek the new values of the old meanings.

*Department of Mathematics, University of Toronto, 40 St. George Street, Toronto, ON M5S 2E4, CANADA.