Important Problems for the XXI Century

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Quantum Mechanics for Universal Quantum Computers

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We have recently proved that one can ascribe a logic to neither classical nor quantum bare experimental data. Hence our theories heavily depend on a chosen mathematical model the data fit. For quantum theory this is infinite dimensional Hilbert space which assumes a continuous 3-D space. However, we have also shown that a universal quantum computer cannot use such a theory - it requires finite dimensional Hilbert space and a discrete 3-D space. The latter theory suffices for a perfect simulation of a molecule on a quantum computer. Should we abandon continuum althogether?

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