

Abstract Submitted
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Are Qubits Fundamentally Flawed for General-purpose Quantum Computing? CHENG-HSIAO WU, Missouri Univ. of Science and Technology — When two qubits are employed for the addition operation of two bits, it is not the superposition of 4 states that are relevant for the quantum computing. Rather, it is the 4 symbolic substitution rules derived after collapsing the two qubits. Thus general-purpose quantum paralleling computing is rule-based, not logic-gate based. This is a great departure. The quantum processor (US patent 8,525,544) contains 4 instructions and stores two data. The flaws of qubit concept are explained. Internal coupling (the entanglement) and external coupling (the readouts) must be integrated as one system. The quantum computing architecture is thus in cellular automata with one such processor in each cell. When the cell-to-cell interconnections are altered, a “new kind of science” appears and explained. Reversible quantum computing is not as stringent as the unitary operation implies.

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