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(54) Title: TECHNIQUE FOR PREPARING A FAULT-TOLERANT CLUSTER STATE

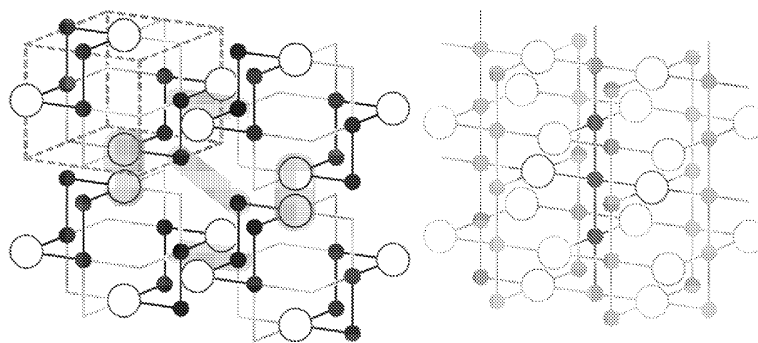


FIG. 9I

(57) Abstract: Quantum systems and techniques are described to generate fault tolerant cluster states for use in quantum computation, quantum networking, and other applications. The systems and techniques include initializing states in first qubits and generating initial resource states by performing first Pauli product measurements on sets of X-type and/or Z-type qubits of the first qubits, the initial resource states comprising qubit cluster states comprising at least three qubits. The final cluster state may then be generated by fusing two or more initial resource states, the fusing comprising performing second Pauli product measurements between qubits of two or more of the initial resource states.

[Continued on next page]

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