

Abstract Submitted
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A quantum neural network computes its own relative phase ELIZABETH BEHRMAN, Mathematics and Physics, Wichita State University, Wichita, KS 67260-0033 — Complete characterization of the state of a quantum system made up of subsystems requires determination of relative phase, because of interference effects between the subsystems. For a system of qubits used as a quantum computer this is especially vital, because the entanglement, which is the basis for the quantum advantage in computing, depends intricately on phase. We present here a first step towards that determination, in which we use a two-qubit quantum system as a quantum neural network, which is trained to compute and output its own relative phase.

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