

Abstract Submitted
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Quantum mechanics over a finite field JOHN GARDINER, Brigham Young University — In the usual formulation of quantum mechanics the state of a system is described as a vector over the complex numbers. Replacing the field of complex numbers with a field of positive characteristic results in a toy theory with novel properties, which we call finite field quantum mechanics (FFQ). A characterizing feature of usual quantum mechanics is quantum entanglement. We discuss the analogous concept of entanglement in FFQ and its status as a resource for information processing tasks.

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