

Abstract Submitted
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A quantum algorithm for finding the modal value¹ MARK COFFEY², ZACHARY PREZKUTA, Colorado School of Mines — We present a quantum algorithm for finding the most often occurring (or modal) value of a data set. We thereby supplement other algorithms that can determine the mean value or similar quantities. Our algorithm [1] requires the combined use of quantum counting and extended quantum search, and gives a quadratic speed up over the classical situation. For a data list of N elements, each entry an integer in the range $[1,d]$, our method requires $O(d N^{1/2})$ oracle calls, and further complexity results are described. [1] to appear in Quantum Information Processing.

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