

On the lower bounds for one-way quantum automata

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Abstract

© Springer-Verlag Berlin Heidelberg 2000. In the paper we consider measured-once (MO-QFA) one way quantum finite automaton. We prove that for MO-QFA Q that $(1/2+\epsilon)$ -accepts ($\epsilon \in (0,1/2)$) regular language L it holds that $\dim(Q) = \Omega(\log \dim(A))$ where A is a minimal deterministic finite automaton accepting L , $\dim(Q)$, and $\dim(A)$ are complexity (number of states) of automata Q and A respectively, $(1/2 - \epsilon)$ is the error of Q . The example of language presented in [2] show that our lower bounds are tight enough.

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