

On classical simulation of quantum machines

Ablayev F., Gainutdinova A.

Kazan Federal University, 420008, Kremlevskaya 18, Kazan, Russia

Abstract

We present a classical probabilistic simulation technique of quantum Turing machines. As a corollary of this technique we obtain several results on relationship among classical and quantum complexity classes such as: $\text{PrQP} = \text{PP}$, $\text{BQP} \subseteq \text{PP}$ and $\text{PrQSPACE}(S(n)) = \text{PrPSPACE}(S(n))$.

<http://dx.doi.org/10.1117/12.620485>

Keywords

Complexity, Quantum computations, Turing machines