

On Complexity of Quantum Languages

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The standard inputs given into quantum machines are classical binary strings. In this view, any quantum complexity class is a collection of subsets of Σ^* . However a quantum machine can also accept quantum states as its input. T. Yamakami has introduced the general framework for quantum operators and inputs. In this talk we present several quantum languages within this model and by generalizing the complexity classes QMA and QCMA we analyze the complexity of the introduced languages. We also discuss how to derive a classical language from a given quantum language.