Contribution Title:	TOWARDS A QUANTUM CHURCH-TURING THEOREM
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There are many theoretical models for quantum computation now, all of which appear to be equivalent in that they can simulate each other with polynomial overheads. In this talk I would like to adress the question whether thereby we have already found the most general way of making quanta compute. In the traditional phrasing of the Church-Turing thesis: Can any reasonable quantum mechanical computation process be simulated efficiently by one of the standard quantum computational models? In a suitably restricted quantum theoretical setting this should be a provable statement, and I will give examples of such Theorems, particularly for lattice systems.