Quantum Distributed Computing: Potential and Limitations

François Le Gall
Graduate School of Mathematics, Nagoya University, Japan

Abstract
The subject of this talk is quantum distributed computing, i.e., distributed computing where the processors of the network can exchange quantum messages. In the first part of the talk I survey recent results [3, 4, 5, 6, 8] and some older results [1, 7] that show the potential of quantum distributed algorithms. In the second part I present our recent work [2] showing the limitations of quantum distributed algorithms for approximate graph coloring. Finally, I mention interesting and important open questions in quantum distributed computing.

2012 ACM Subject Classification Theory of computation → Distributed algorithms; Theory of computation → Quantum computation theory

Keywords and phrases Quantum computing, distributed algorithms, CONGEST model, LOCAL model

Digital Object Identifier 10.4230/LIPICS.OPODIS.2023.2

Category Invited Talk

References


