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Towards one-way quantum computation with realistic devices

TERRY RUDOLPH, Imperial College London

The one-way model seems particularly suited to certain proposed architectures for quantum computation, particularly those involving non-deterministic quantum gates. This talk will focus on strategies for dealing with faulty devices in the one-way model, particularly within the framework of linear optical quantum computation, although the results have more general significance. Special mention will made of strategies for dealing with faulty single photon sources and detectors, which are the primary experimental challenge for many proposed implementations of optical quantum computation.