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Nota di bibliografia	Includes bibliographical references.
Nota di contenuto	Introduction -- Quantum Optics -- Quantum States and Quantum State Manipulations -- Offline Scheme And One-Way Quantum Computation -- Cluster States And One-Way Quantum Computation -- Experimental Generation of Optical Continuous-Variable Cluster States -- Experimental Demonstration of Controlled-Z Gate for Continuous Variables -- Experimental Demonstration of Optimum Nonlocal Gate for Continuous Variables -- Experimental Demonstration of Gain-Tunable Entangling Gate for Continuous Variables -- Temporal-Mode Cluster States -- Summary.
Sommario/riassunto	In this thesis, the author develops for the first time an implementation methodology for arbitrary Gaussian operations using temporal-mode cluster states. The author also presents three experiments involving continuous-variable one-way quantum computations, where their non-classical nature is shown by observing entanglement at the outputs.

The experimental basic structure of one-way quantum computation over two-mode input state is demonstrated by the controlled-Z gate and the optimum nonlocal gate experiments. Furthermore, the author proves that the operation can be controlled by the gain-tunable entangling gate experiment.
