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## **Generation and coherent extraction of confined continuous-variable systems**

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The use of infinite dimensional systems (continuous variables) for advanced quantum information tasks will be discussed, considering in particular generation, reconstruction and extraction schemes suitable for confined quantum systems. First I will present two approaches for generating Gaussian graph states, which represent the basic resources for measurement-based quantum computation with continuous variables. Then I will introduce a minimal scheme to tomographically reconstruct Gaussian graph states in the case of quantum networks composed of confined continuous variables. Finally, I will present a general framework to coherently convert confined into travelling quantum modes and vice versa.