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Type: **Talk**

Quantum Frequency Combs: generation, characterization and applications

Tuesday 22 August 2017 11:00 (30 minutes)

Multimode entanglement is an essential resource for quantum information processing. However, multimode entangled states are generally constructed by targeting a specific entanglement configuration. This yields to a fixed experimental setup that therefore exhibits reduced versatility and scalability. Here we demonstrate a reconfigurable highly multimode entangled state generated by parametric down conversion of a mode locked laser source. Without altering either the initial squeezing source or the experimental architecture, we realize the construction of many cluster states of various sizes and connectivities. More generally we show that this system enables the complete characterization of quantum correlations and fluctuations for any multimode Gaussian state. Progress in the direction of non-gaussian multimode states will be also reported.

Topic:

Mini-workshop: Quantum Foundations and Quantum Information

Summary

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Session Classification: Workshop on continuous variables and quantum information

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