



**Physikalisches Kolloquium**  
Einladung

**Physics Colloquium**  
Invitation

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**Monday, 13 January 2020**


Lecture Hall N24/H13, 16:15

Coffee and cookies will be served in front of the lecture hall from 16:00

## Continuous variables quantum complex networks

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Experimental procedures based on optical frequency combs and parametric processes are able to produce quantum states of light involving large number of modes -in the frequency and time domain- that can be mapped and analyzed in term of quantum complex networks. The protocols, along with mode selective and multimode homodyne measurements, in fact, allow for the implementation of reconfigurable entanglement structures that can go beyond the regular geometry of cluster states and implement graphs with more complex topology. Quantum complex networks, mimicking real-world structures, can then be explored to study quantum transport and tailored quantum communication and information protocols. Additional mode-selective non-Gaussian operations have been recently demonstrated. When applied to the graph structure entanglement properties and non-Gaussian features are spread out with particular geometrical properties.