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【404】 Optically probed phonon-Fock state dynamics

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We demonstrate the experimental creation and detection of a single phonon Fock state at room-temperature using two-color pump-probe excitation and spectrally-resolved time-correlated photon counting [1]. Our scheme is inspired by recent proposals and experiments in cavity quantum optomechanics, but we anticipate that it will be applicable on a broad range of organic and inorganic materials, shedding new light on molecular dynamics in the quantum regime. Perspective on how to probe vibrational entanglement at room temperature will be presented.

[1] M. D. Anderson et al, arXiv:1802.04163 [quant-ph] –<https://arxiv.org/abs/1802.04163> (2018)

Authors: Mr TARRAGO VELEZ, Santiago (EPFL); Mr KIPFER, Nils (EPFL); ANDERSON, Mitchell (Ecole Polytechnique Federale de Lausanne); GALLAND, Christophe (EPFL); Mr SEIBOLD, Kilian (EPFL)

Co-authors: Mrs FERNANDEZ, Bernadette (EPFL); Mrs ZHU, Tianqi (EPFL); Mr AHMED, Aqeel (EPFL); Prof. SANGOUARD, Nicolas (Uni Basel); Prof. SAVONA, Vincenzo (EPFL); Dr FLAYAC, Hugo (EPFL)

Presenter: GALLAND, Christophe (EPFL)

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