

NTU Q

RELEVANT EVENTS

Classiq 量子計算工作坊

QHack

iQuHACK 2024

HIGHLIGHTING NEWS

IMAGES HIDDEN IN NOISE REVEALED BY A QUANTUM-INSPIRED PHASE-IMAGING METHOD

A quantum-inspired phase-imaging method based on light intensity correlation measurements that is robust to phase noise has been introduced. The new imaging method can operate even with extremely dim illumination (or when we cannot use high light intensity so as not to damage the object, for example a delicate biological sample or a work of art.) and can prove useful in emerging applications such as in infrared and X-ray interferometric imaging and quantum and matter wave interferometry.

No matter if you take photos of a cat with your smartphone or image cell cultures with an advanced microscope, you do this by measuring the intensity (brightness) of light pixel by pixel. Light is characterized not only by its intensity but also by its phase. Interestingly, transparent objects can become visible if you're able to measure the phase delay of light that they introduce.

Phase contrast microscopy enables label-free and quantitative characterization of living specimens, such as cell cultures, and can find applications in neurobiology or cancer research. A phase imaging approach based on intensity correlation can also be widely used in very noisy environments. The new method works with both classical (laser and thermal) and quantum light.

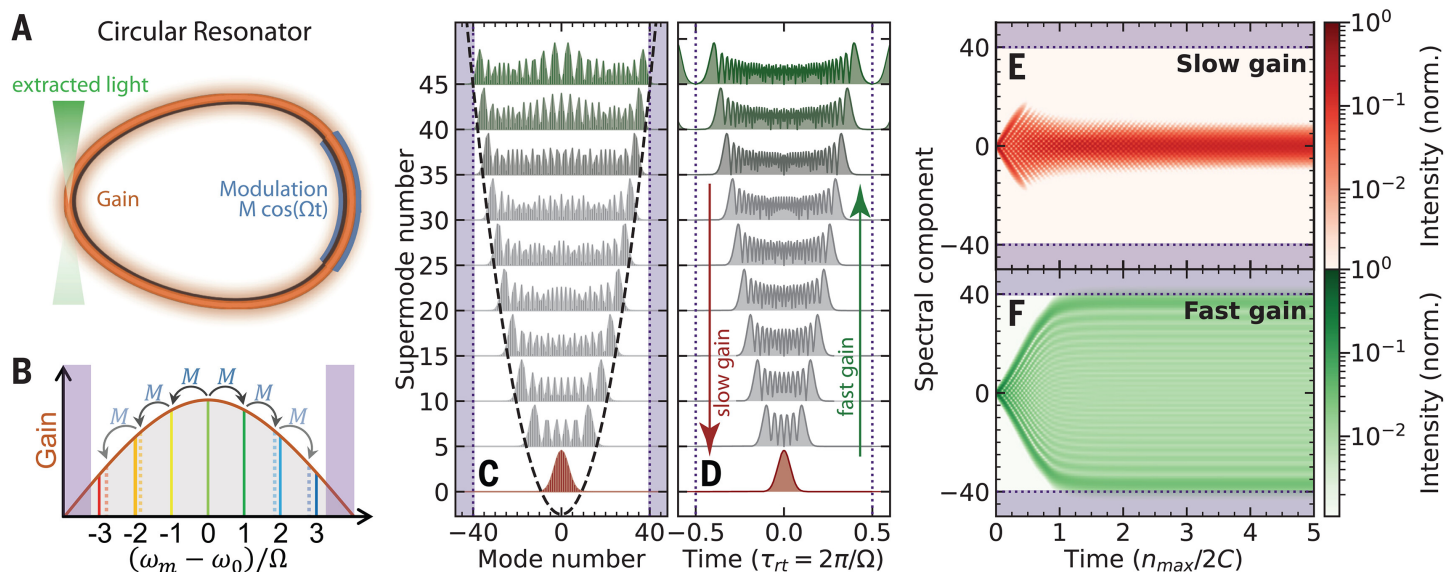
[READMORE](#)

QISKIT 1.0 COMING IN FEBRUARY, 2024

This upcoming version centered on performance, stability and usability. Qiskit 1.0 is an open-source SDK for working with quantum computers at the level of extended quantum circuits, operators, and primitives.

[READMORE](#)

QUANTUM WALK COMB IN A FAST GAIN LASER



The generation of stable and controllable optical frequency combs has important implications for applications in metrology and precision spectroscopy. Heckelmann *et al.* propose and demonstrate a quantum walk laser in synthetic frequency space. The technique allows for the development of a frequency comb laser based on a coherent walk in frequency space combined with a fast-gain medium.

[READMORE](#)

計畫補助單位：



IBM Quantum Computer Hub at National Taiwan University

Rm.711, Dept. of Physics /Center for Condensed Building

No. 1, Sec.4 Roosevelt Rd., Da'an Dist. Taipei City 106319, Taiwan



ntuq2018@gmail.com



:+886 2-33669928



<http://quantum.ntu.edu.tw/>