



THE FASTEST WAY TO A QUANTUM FUTURE

A 12-mode universal quantum photonic processor

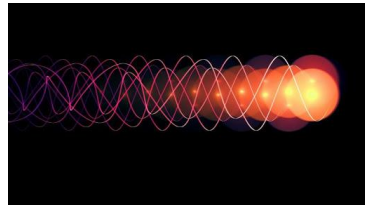


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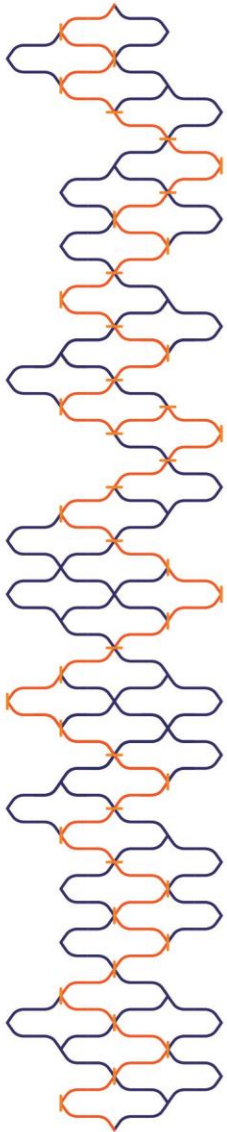
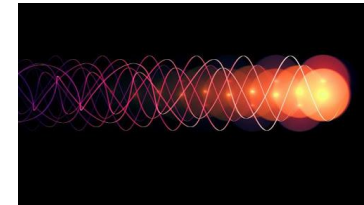
A quantum photonic processor (QPP)

Processing unit of a photonic quantum computing device

Input quantum light



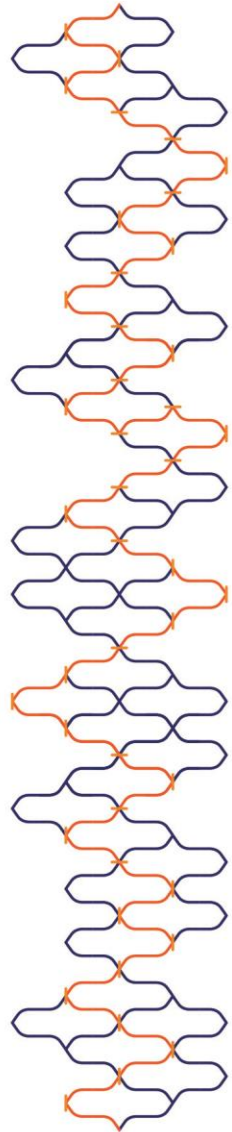
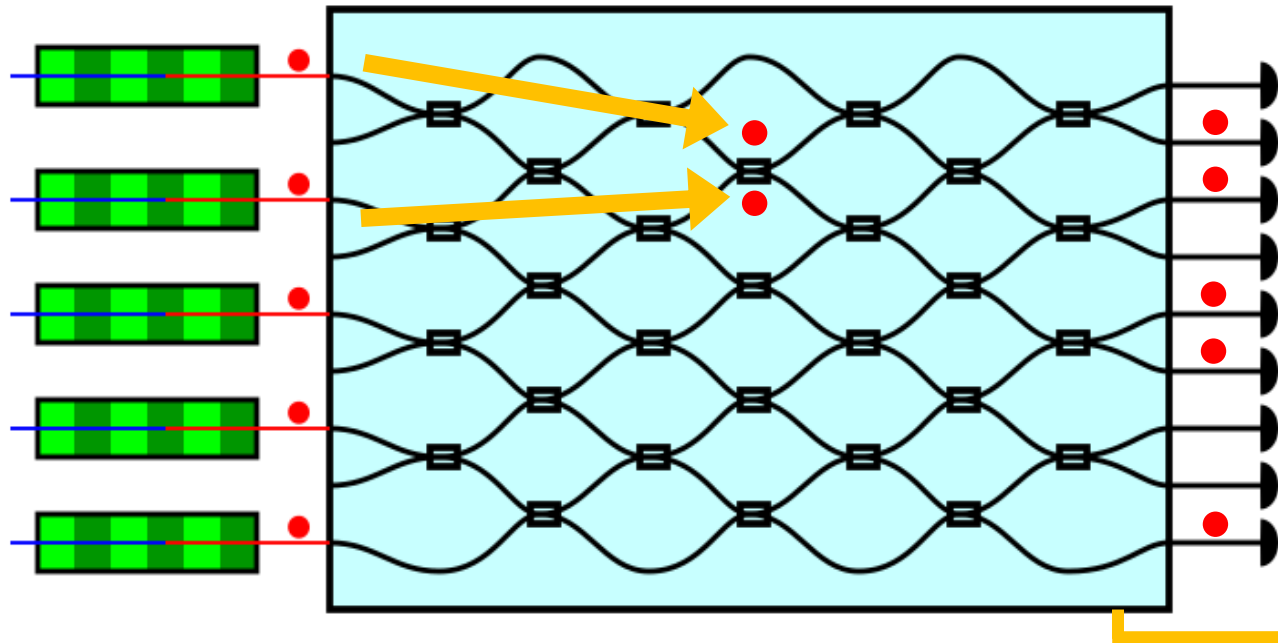
Output quantum light



Example setup

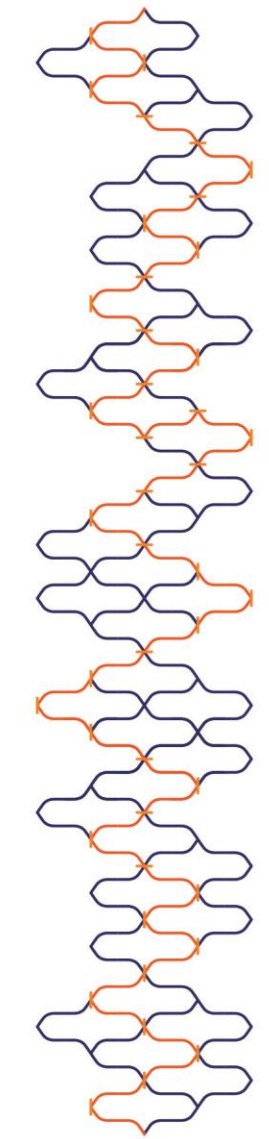
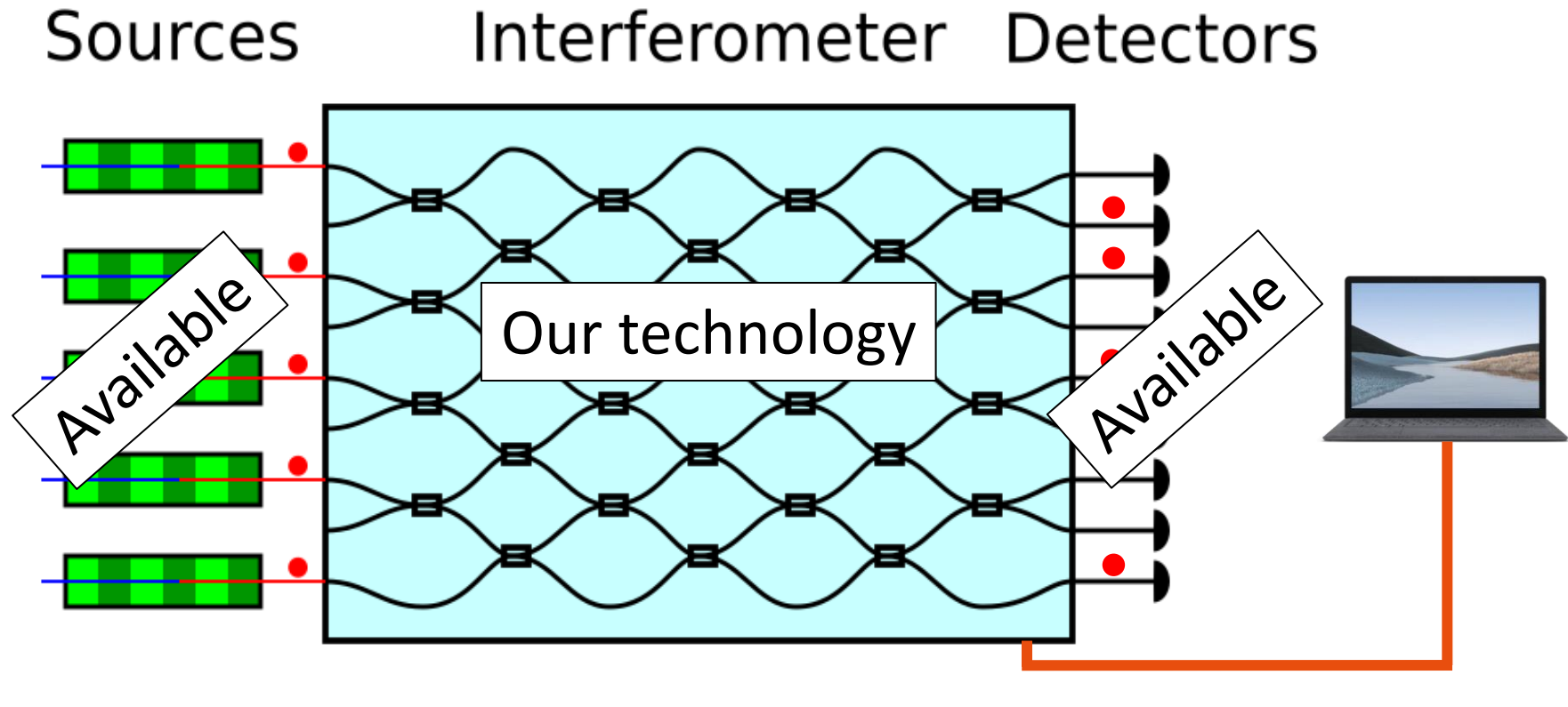
For linear optics quantum information processing & quantum simulation

Sources Interferometer Detectors



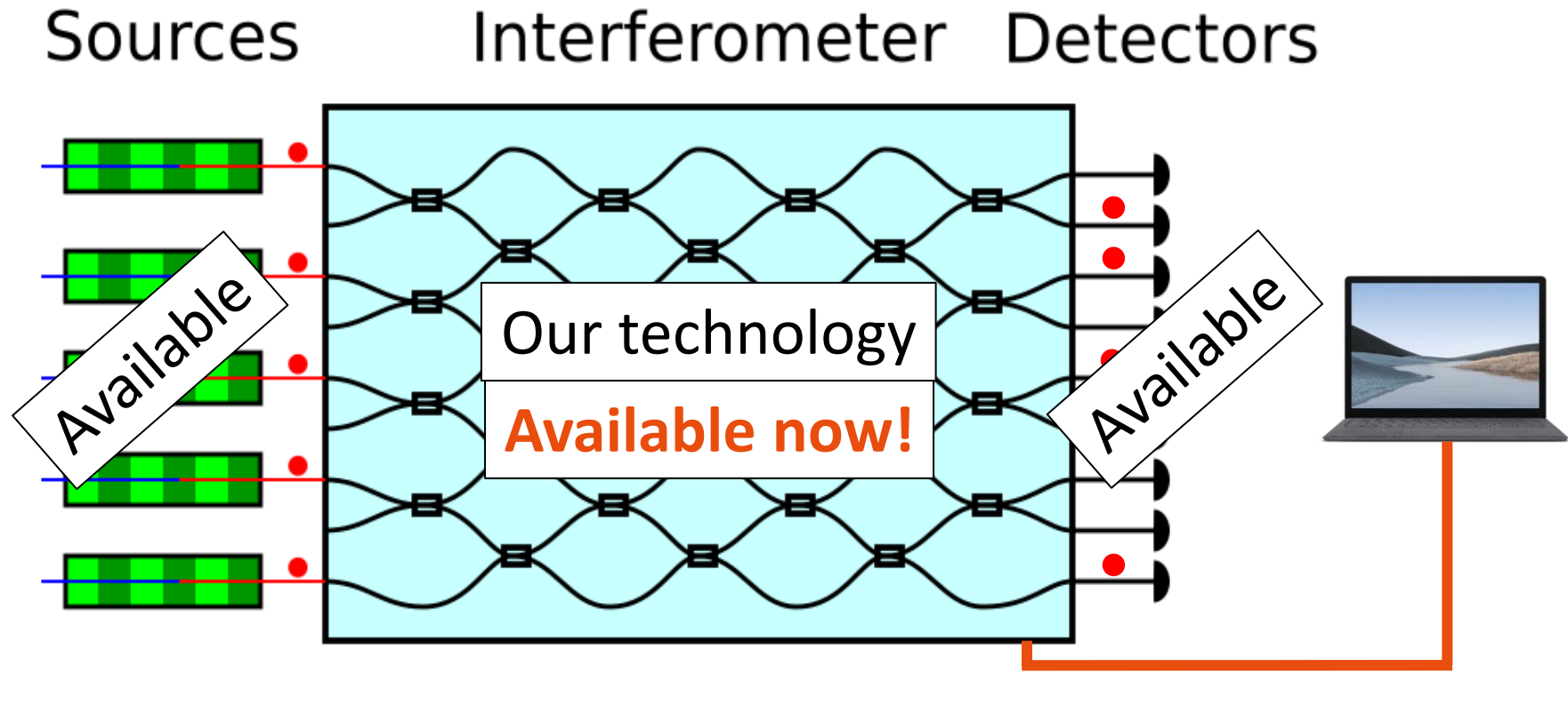
Example setup

For linear optics quantum information processing & quantum simulation



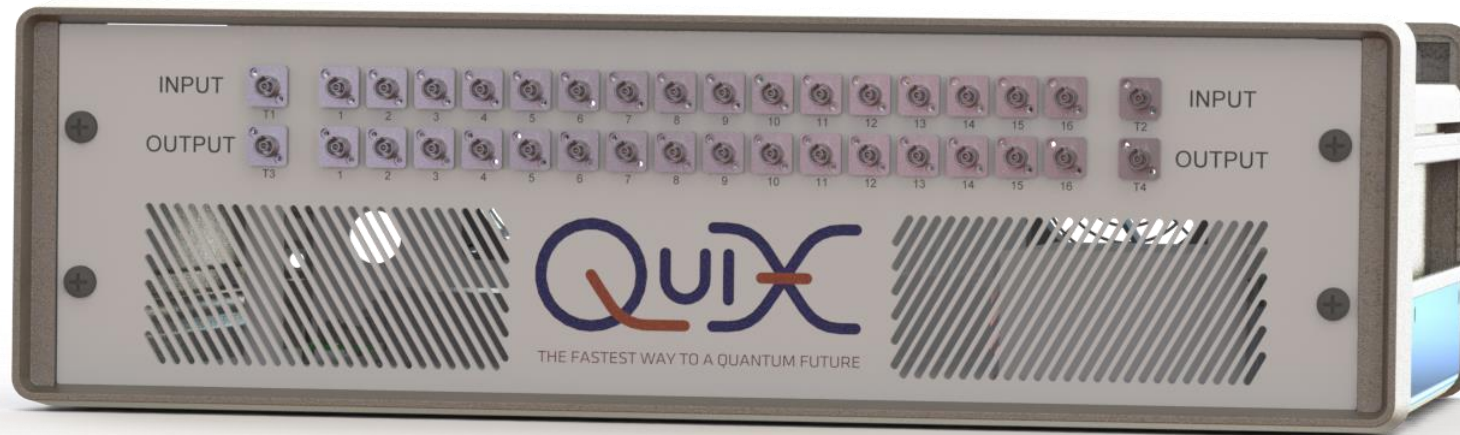
Example setup

For linear optics quantum information processing & quantum simulation



Our quantum photonic processor

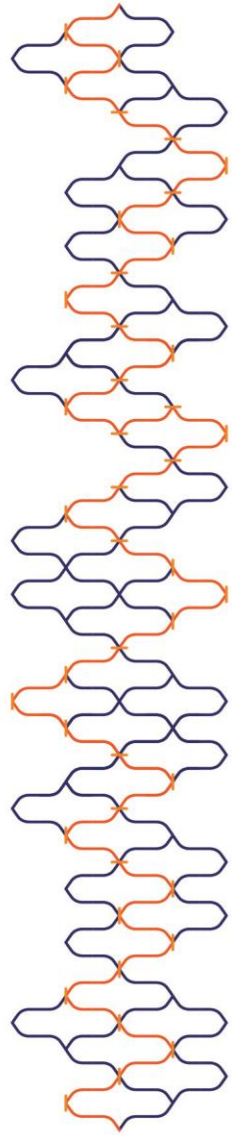
Large-scale, phase stable and fully reconfigurable!



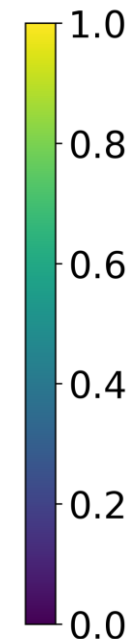
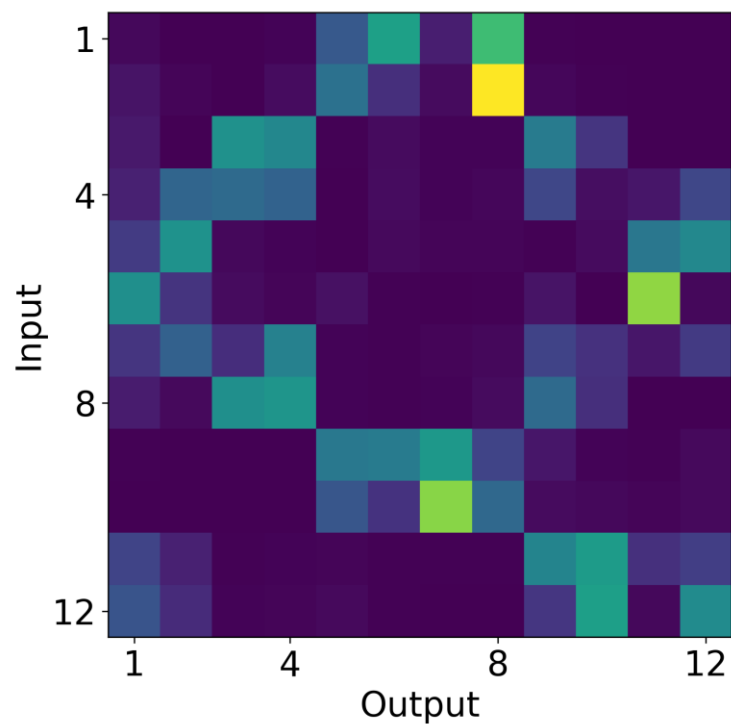
**12-mode universal
The World Largest
quantum photonic processor
universal QPP**



**Commercially
available**



Our logo

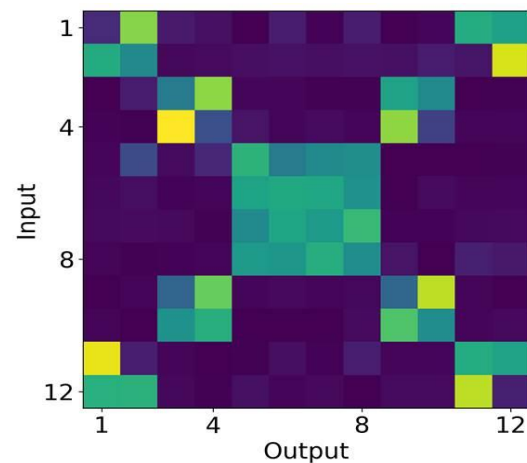
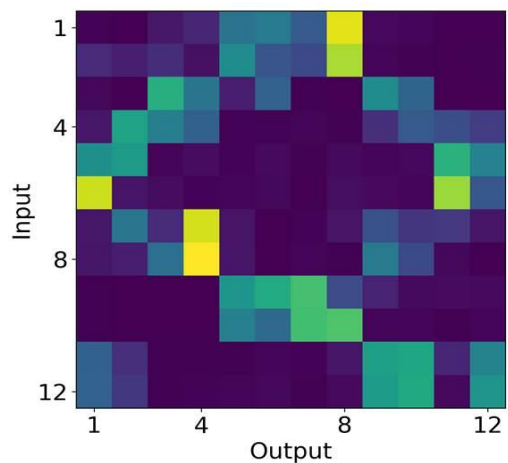


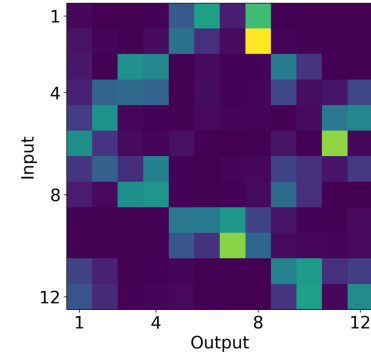
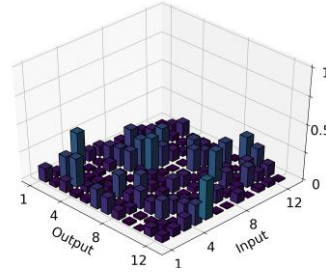
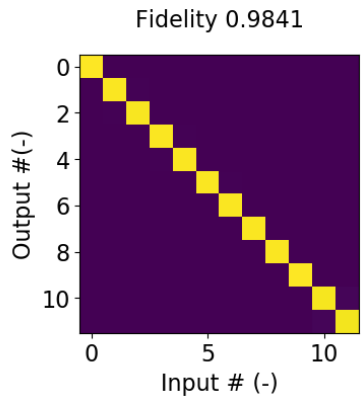
Normalized intensity (-)



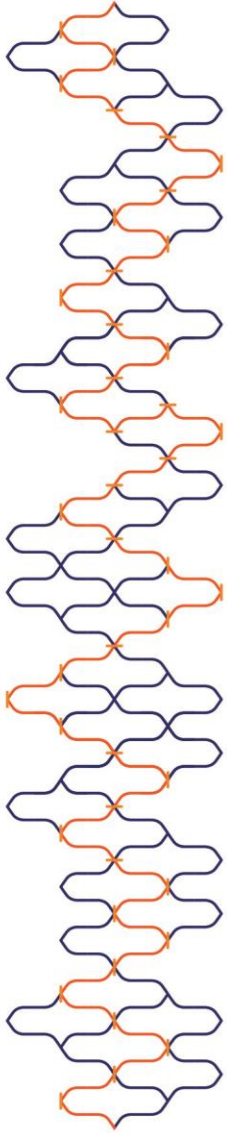
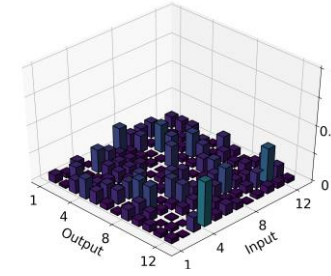
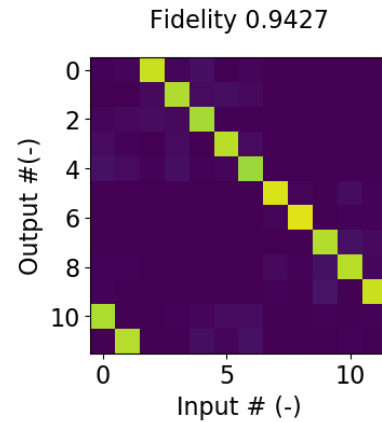
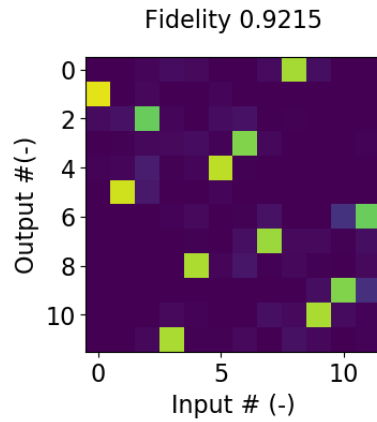
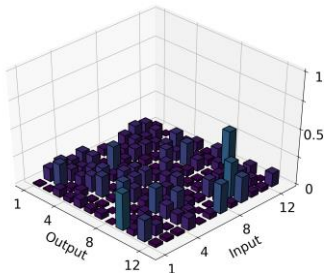
$$\mathcal{F}_Q = 0.922$$

$$\mathcal{F}_X = 0.930$$



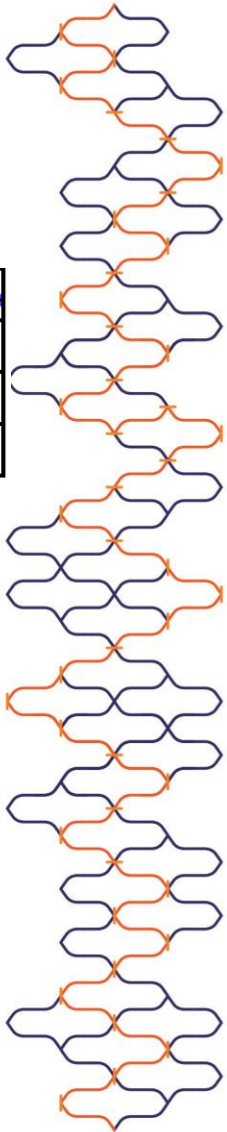
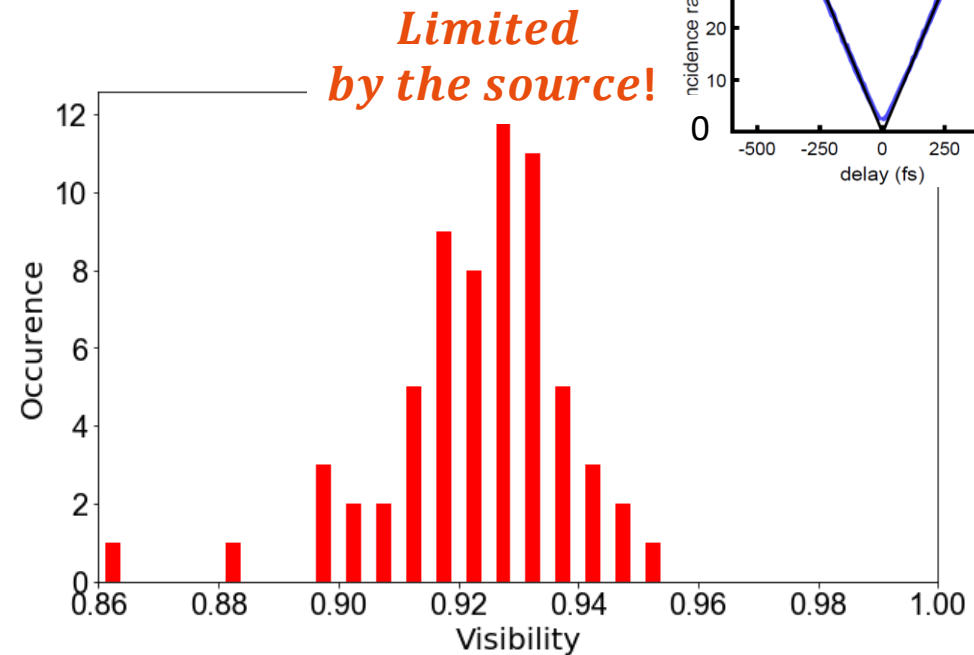
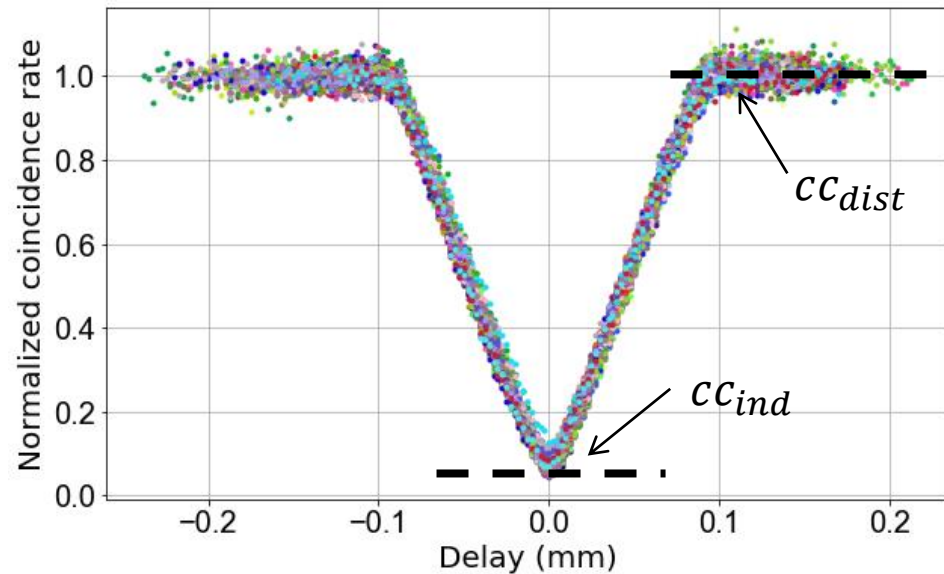


Any optical transformation!



High-Visibility Quantum Interference

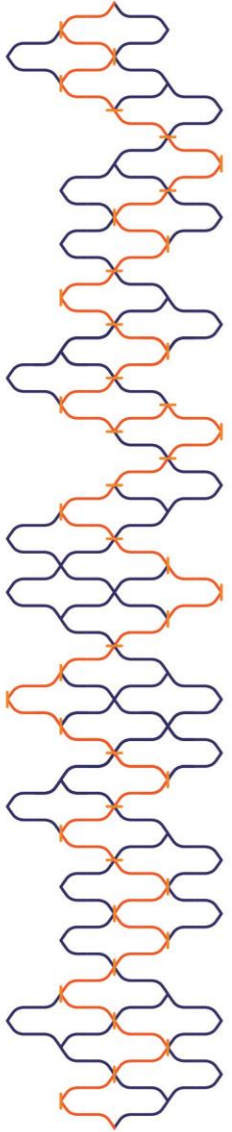
$$V_{ave} = 0.923$$



Conclusion

We built and benchmarked the largest photonic quantum processor

Come see full presentation this Friday at 15:00 – signup @ www.quix.nl



Conclus

**We built
photonics**

**Come see
15:00 – s**

