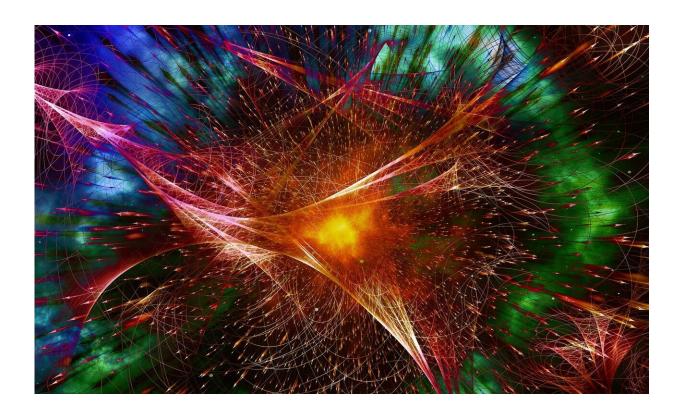


## The quantum advantage: a novel demonstration

February 8 2021



Credit: Pixabay/CC0 Public Domain

Is a quantum machine really more efficient than a conventional machine for performing calculations? Demonstrating this 'advantage' experimentally is particularly complex and a major research challenge around the world.



Scientists from the CNRS, the University of Edinburgh (Scotland) and the QC Ware, Corp., (France and USA) have just proved that a quantum machine can perform a given verification task in seconds when the same exercise would take a time equivalent to the age of the universe for a conventional computer.

For this demonstration, they combined a complex interactive algorithm that solves a certain type of mathematical problem with <u>limited</u> <u>information</u> and a simple experimental photonics system that can be made in all advanced photonics laboratories.

Their work was published on 8 February 2021 in *Nature Communications*.

**More information:** Experimental demonstration of quantum advantage for NP verification with limited information. Federico Centrone, Niraj Kumar, Eleni Diamanti, and Iordanis Kerenidis. *Nature Communications*, February 8, 2021. DOI: 10.1038/s41467-021-21119-1

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