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Type: **Talk**

Mirror modular cloning and fast quantum associative retrieval

Tuesday 6 September 2022 16:30 (20 minutes)

I will show that a quantum state can be perfectly cloned up to global mirroring with a unitary transformation that depends on one single parameter. This is equivalent to “perfect” cloning for quantum associative memories which, as a consequence efficiently hold exponentially more information than their classical counterparts. I will present a probabilistic quantum associative retrieval algorithm which can correct corrupted inputs and is exponentially faster than the address-based Grover alternative, albeit at the price of possible retrieval errors due to its probabilistic nature. This is particularly important in view of recent proposals to use quantum memories for fast associative data triggering in large throughput high-energy experiments at LHC.

Internet talk

Yes

Is this abstract from experiment?

No

Name of experiment and experimental site

N/A

Is the speaker for that presentation defined?

Yes

Details

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