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Quantum Teleportation in the Age of Physical Quantum Networks AIDAN GILLAM, JEAN-FRANCOIS VAN HUELE, Brigham Young University — A powerful example of current quantum technology is quantum teleportation, a process that allows an unknown quantum state to be communicated from one location to another. I discuss theoretical quantum teleportation involving the sharing of a maximally entangled pair of qubits and the sending of two bits of classical information. I show how teleportation is expressed in the language of quantum circuitry. I then address complications relating to the physical implementation of teleportation within quantum networks. I conclude by discussing exciting developments and new teleportation schemes that seek to address these issues.

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