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Recent progress towards enabling the scalability of quantum hardware using quantum communications

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Abstract

I would like to give an update on IBM's recent progress towards scaling quantum computing systems using quantum communication links. Modular quantum computing architecture through scalable high-quality fast quantum communications links is becoming essential to any quantum computing platforms. I will review the IBM Quantum Development roadmap to show IBM's vision of scaling quantum computing systems and introduce the latest achievements to realize this vision using a chip-to-chip and inter-packaging quantum communications. I will close by reviewing the latest advancement in discovering a new LDPC code that can be realizable by on-chip quantum communications links.