Generalizing Quantum Tanner Codes

Olai Mostad

December 13, 2024

Quantum Tanner codes (from 2022) are one of the few constructions of quantum error correction codes that can be used to construct asymptotically good quantum low-density parity-check (LDPC) codes. We have generalized this construction and shown that our generalization contains a new family of asymptotically good quantum LDPC codes. We have also done some numerical simulations, showing that our codes outperform the original construction for (some) finite lengths.