

# Tensor Network Methods in Quantum Error Correction

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This is a short review on the different tensor network methods used in Quantum Error Correction. This was done while trying to resolve the dimension incompatibility issue in [FP2014]. Let's see what this leads to

## I. MPS/MPO REPRESENTATIONS OF TOPOLOGICAL CODES

- BSV 14
- CF 12
- Chubb 2021

## II. PEPS REPRESENTATIONS OF THE TOPOLOGICAL CODES

- DP 2017 for the surface codes.
- There was some other paper that used a PEPO representation, but I am unable to find it.

## III. CHANNEL STATE REPRESENTATION

- FP 2014
- DP 2017

## IV. SEED CODES TO CONSTRUCT QEC CODES

- The whole 9 yards from Terry Farrelly,
- Quantum Lego from Cao Lackey
- The whole shenanigans of Holographic codes