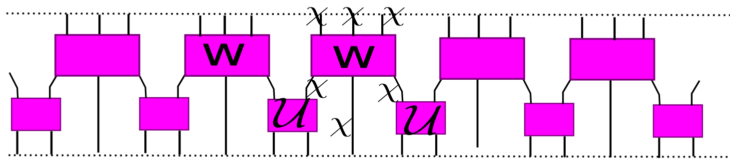
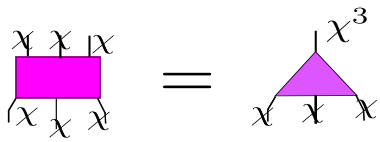
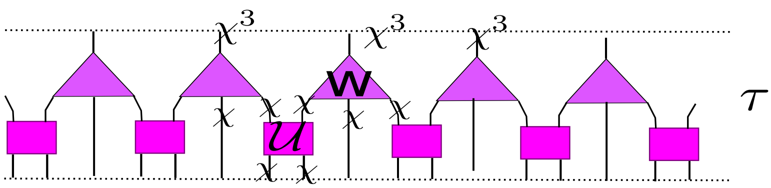
The following tensor network is just **one layer** of **unitary ternary MERA,**
The tensors of W and U are unitary, so, number of indices which comes in and out are equal, to make it sure that they are Unitary. Suppose the bond dimension of each index is \chi, χ , which I show it on the lines to emphasize on their bond dimension.



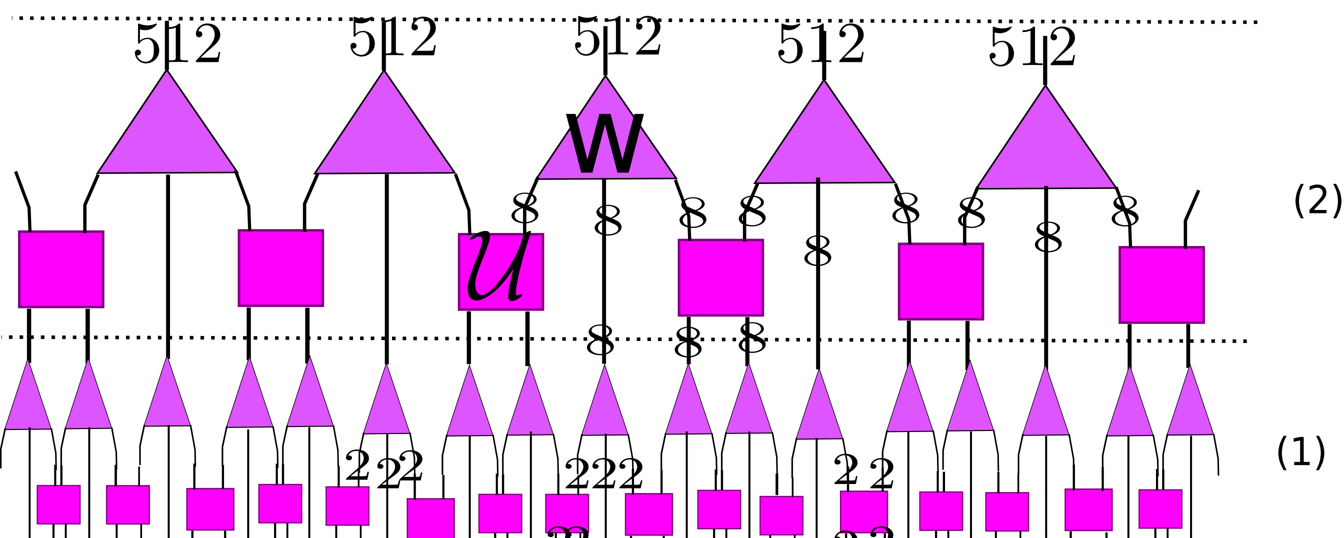
For simplicity I use the following, where I combine three outgoing indices of unitary w into one index with bond dimension of χ^3



So, triangles are unitary that outgoing index actually contains three index.
The following is just one layer of Unitary ternary MERA, say τth layer. So, to obtain full unitary tensor tensor network, I repeat a number of these layers.



I aim to use two-layer unitary ternary MERA in my actual simulation, which comes as follows. Since complexity of simulation scales like 8^{9}, it's possible to handle it on today's computer. The following numbers, {2, 8, 512} show bond dimension of indices. It contains 2 layers.



Last point: Suppose the last layer of unitary tensor network is the following, it could be shown time complexity of algorithm scales like $\mathcal{O}(\chi^9)$, where χ is bond dimension of last layer.

Last Layer: