

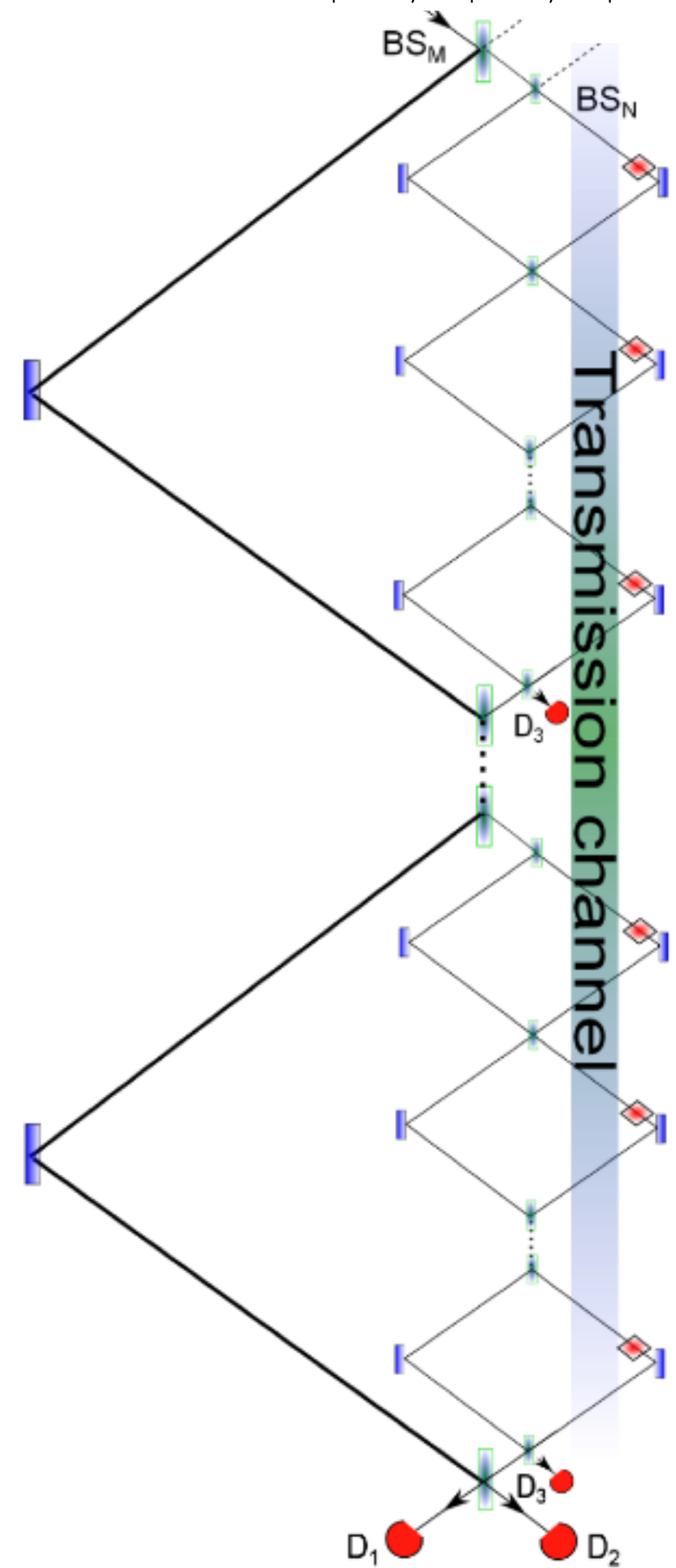
(b)

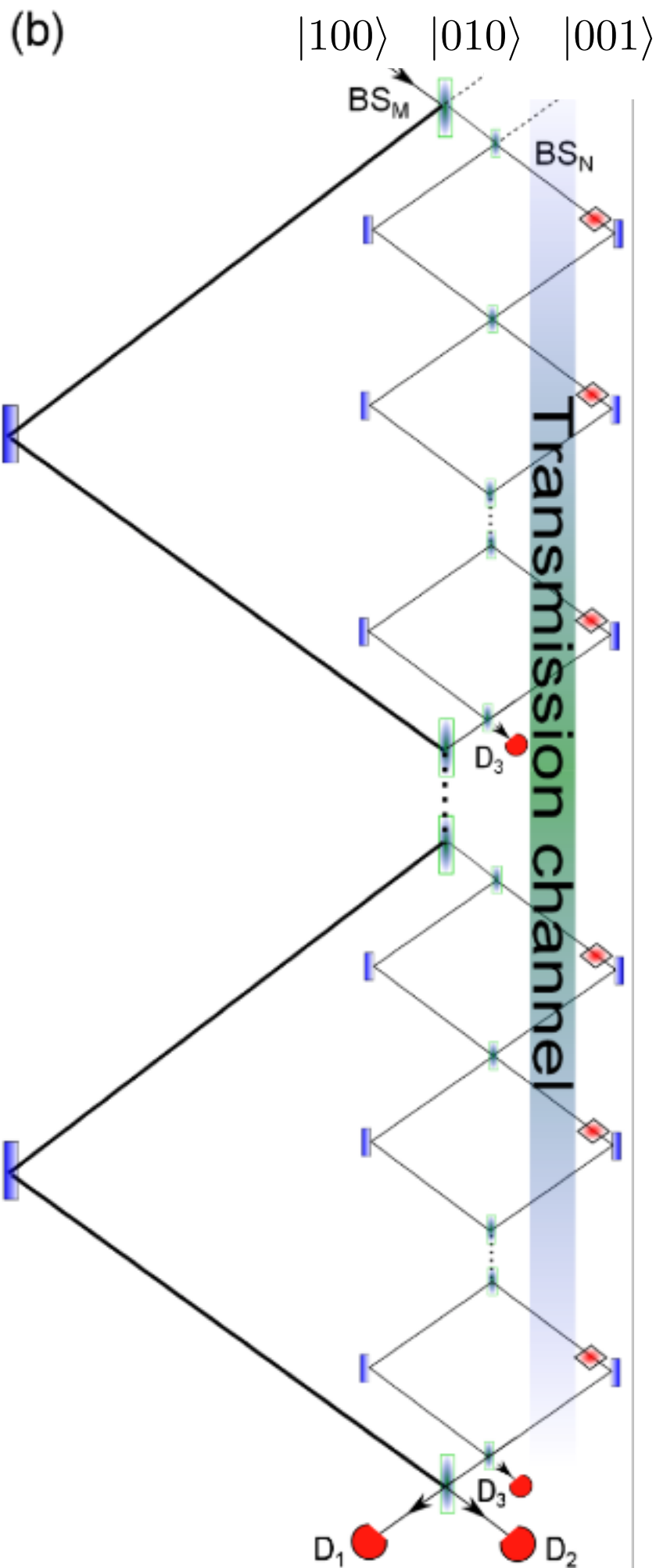
$|100\rangle$ $|010\rangle$ $|001\rangle$

After first BS_M :

$$|100\rangle \xrightarrow{BS_M} \cos(\theta_M) |100\rangle + \sin(\theta_M) |010\rangle$$

goes through
previous device





After first BS_M :

$$|100\rangle \xrightarrow{BS_M} \cos(\theta_M) |100\rangle + \sin(\theta_M) |010\rangle$$

goes through
previous device

Bob blocks photons:

Previously, hit the left detector (D_1).
Here, that is part of input to second BS_M :

$$\cos(\theta_M) |100\rangle + \sin(\theta_M) |010\rangle$$

Unchanged!

After M th BS_M :

$$\cos(M\theta_M) |100\rangle + \sin(M\theta_M) |010\rangle = |010\rangle$$

D_2