

Diagrammatic equation for the operator $\hat{S}^{0,1}$:

The left side shows a vertical line with two horizontal lines crossing it, each marked with an 'X' at the intersection. This is equal to a square box containing two arcs connecting the top and bottom horizontal lines. This is further equal to the operator $\hat{S}^{0,1}$ defined by the following sum:

$$\hat{S}^{0,1} = \sum_{j,k=0}^{d-1} |j\rangle \langle k| \otimes |k\rangle \langle j|$$