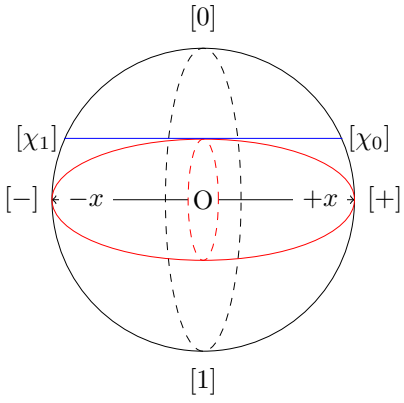

$$\mathcal{B}(\rho) = (1-p)\rho + p\sigma_x\rho\sigma_x$$

$$\sigma_x = \begin{pmatrix} 0 & 1 \\ 1 & 0 \end{pmatrix}$$

$$\mathcal{C}(\rho) = \langle +|\rho|+\rangle\,[\chi_+] + \langle -|\rho|-\rangle\,[\chi_-]$$

$$|\chi_\pm\rangle = \sqrt{1-p}\,|0\rangle \pm \sqrt{p}\,|1\rangle$$

Caption: Enclosed inside a Bloch sphere (in black), an ellipsoid (in red) and line (in blue) representing the locus of Bloch vectors of $\mathcal{B}$ and $\mathcal{C}$ respectively where $p = 0.3$