

$$\frac{1}{\sqrt{2}}s |\ast \uparrow \nearrow \rangle |\uparrow \rangle |\nearrow \rangle |\ast \nearrow \uparrow \rangle$$

$$+ \frac{1}{\sqrt{2}}c |\ast \uparrow \searrow \rangle |\uparrow \rangle |\searrow \rangle |\ast \searrow \uparrow \rangle$$

$$- \frac{1}{\sqrt{2}}c |\ast \downarrow \nearrow \rangle |\downarrow \rangle |\nearrow \rangle |\ast \nearrow \downarrow \rangle$$

$$+ \frac{1}{\sqrt{2}}s |\ast \downarrow \searrow \rangle |\downarrow \rangle |\searrow \rangle |\ast \searrow \downarrow \rangle$$

$$\frac{1}{\sqrt{2}} |\ast \uparrow \rangle |\uparrow \rangle (s|\nearrow \rangle |\ast \nearrow \rangle + c|\searrow \rangle |\ast \searrow \rangle)$$

$$+ \frac{1}{\sqrt{2}} |\ast \downarrow \rangle |\downarrow \rangle (-c|\nearrow \rangle |\ast \nearrow \rangle + s|\searrow \rangle |\ast \searrow \rangle)$$

$$\frac{1}{\sqrt{2}} |\ast \uparrow \rangle |\uparrow \rangle |\downarrow \rangle |\ast \rangle$$

$$- \frac{1}{\sqrt{2}} |\ast \downarrow \rangle |\downarrow \rangle |\uparrow \rangle |\ast \rangle$$

\mathcal{L} měří $\uparrow \downarrow$

$|\ast \rangle |EPR\rangle |\ast \rangle$

příprava $|EPR\rangle$

komunikace \mathcal{L} a \mathcal{P}

\mathcal{P} měří $\nearrow \searrow$

$|\ast \uparrow \nearrow \rangle \leftrightarrow \mathcal{L}$ naměřil \uparrow a dozvěděl se, že \mathcal{P} naměřil \nearrow

$|\ast \nearrow \downarrow \rangle \leftrightarrow \mathcal{P}$ naměřil \nearrow a dozvěděl se, že \mathcal{L} naměřil \downarrow

$$\frac{1}{\sqrt{2}} (s|\ast \uparrow \rangle |\uparrow \rangle - c|\ast \downarrow \rangle |\downarrow \rangle) |\nearrow \rangle |\ast \nearrow \rangle$$

$$+ \frac{1}{\sqrt{2}} (c|\ast \uparrow \rangle |\uparrow \rangle + s|\ast \downarrow \rangle |\downarrow \rangle) |\searrow \rangle |\ast \searrow \rangle$$

$$- \frac{1}{\sqrt{2}} |\ast \rangle |\searrow \rangle |\nearrow \rangle |\ast \nearrow \rangle$$

$$+ \frac{1}{\sqrt{2}} |\ast \rangle |\nearrow \rangle |\searrow \rangle |\ast \searrow \rangle$$

$$|\nearrow \rangle = c|\uparrow \rangle + s|\downarrow \rangle$$

$$|\searrow \rangle = c|\downarrow \rangle - s|\uparrow \rangle$$

$$|\uparrow \rangle = c|\nearrow \rangle - s|\searrow \rangle$$

$$|\downarrow \rangle = c|\searrow \rangle + s|\nearrow \rangle$$

$$s = \sin \frac{\theta}{2}$$

$$c = \cos \frac{\theta}{2}$$

Mnohosvětová varianta EPR experimentu