

**Lemma.**  $\langle \mathbf{Pos}_{\mathcal{U}}, \otimes, \mathbf{1} \rangle$  from ?? equipped with the braiding isomorphism

$$\mathrm{br}_{X,Y} : X \otimes Y \xrightarrow{\cong} Y \otimes X$$

$$\langle x, y \rangle \mapsto \uparrow \{y\} \times \uparrow \{x\},$$

defined for all  $X, Y \in \mathbf{Ob}_{\mathbf{Pos}_{\mathcal{U}}}$ , forms a symmetric monoidal category.