

$$\begin{aligned}
 \left((f \otimes g) \circ \text{br}_{\mathcal{U}_Y, \mathcal{U}_U} \right) (x, z) &= \langle f(x), g(z) \rangle \circ \text{br}_{\mathcal{U}_Y, \mathcal{U}_U} \\
 &= \left\langle \bigcup_{z' \in g(z)} \uparrow z', \bigcup_{x' \in f(x)} \uparrow x' \right\rangle.
 \end{aligned}$$