

$$\begin{aligned}
& (\text{Unc}(\text{Unc}(\mathbf{f})) \circ \mu_{\mathcal{U}}^{\mathbf{B}})([[p_{11}, p_{12}], [p_{21}, p_{22}]]^*, [q_1, q_2]) \\
&= \bigvee_{[[q_{11}, q_{12}], [q_{21}, q_{22}]] \in \mathbf{Int}(\mathbf{Int}(\mathbf{B}))} \text{Unc}(\mathbf{f})([p_{11}, p_{12}]^*, [q_{11}, q_{12}]) \wedge \text{Unc}(\mathbf{f})([p_{21}, p_{22}]^*, [q_{21}, q_{22}]) \\
&\wedge (q_{11} \leq q_1) \wedge (q_{12} \leq q_1) \wedge (q_{21} \leq q_2) \wedge (q_{22} \leq q_2) \\
&= \bigvee_{[[q_{11}, q_{12}], [q_{21}, q_{22}]] \in \mathbf{Int}(\mathbf{Int}(\mathbf{B}))} \mathbf{f}(p_{11}^*, q_{11}) \wedge \mathbf{f}(p_{12}^*, q_{12}) \wedge \mathbf{f}(p_{21}^*, q_{21}) \wedge \mathbf{f}(p_{22}^*, q_{22}) \\
&\wedge (q_{11} \leq q_1) \wedge (q_{12} \leq q_1) \wedge (q_{21} \leq q_2) \wedge (q_{22} \leq q_2).
\end{aligned}$$