

$$\begin{aligned}
(f_1 \otimes g_1)(\langle a, c \rangle^*, \langle b, d \rangle) &= f_1(a^*, b) \wedge g_1(c^*, d) \\
&\leq_{\mathbf{DP}} f_2(a^*, b) \wedge g_2(c^*, d) \\
&= (f_2 \otimes g_2)(\langle a, c \rangle^*, \langle b, d \rangle)
\end{aligned}$$