

Definition (Product operator \otimes). For two maps $h_1 : \mathbf{F}_1 \rightarrow \mathcal{A}\mathbf{R}_1$ and $h_2 : \mathbf{F}_2 \rightarrow \mathcal{A}\mathbf{R}_2$, define

$$\begin{aligned} h_1 \otimes h_2 : (\mathbf{F}_1 \times \mathbf{F}_2) &\rightarrow \mathcal{A}(\mathbf{R}_1 \times \mathbf{R}_2), \\ \langle f_1, f_2 \rangle &\mapsto h_1(f_1) \times h_2(f_2), \end{aligned}$$

where \times is the product of two antichains.