

Some properties of functors

Let f, g be functors, \mathcal{X}, \mathcal{Z} be filters. Then $\mathcal{X} [g \circ f] \mathcal{Z}$ iff there exists an ultrafilter y such that $\mathcal{X} [f] y$ and $y [g] \mathcal{Z}$.

Let f, g, h be functors. Then

$$f \circ (g \sqcup h) = f \circ g \sqcup f \circ h.$$

Also

$$f \sqcap (\mathcal{A} \times^{\text{FCD}} \mathcal{B}) = \text{id}_{\mathcal{B}}^{\text{FCD}} \circ f \circ \text{id}_{\mathcal{A}}^{\text{FCD}}.$$