

Definition of funcoids

Let's fix two sets A and B .

The pair of two functions $\alpha: \mathfrak{F}(A) \rightarrow \mathfrak{F}(B)$ and $\beta: \mathfrak{F}(B) \rightarrow \mathfrak{F}(A)$ such that

$$\mathcal{Y} \sqcap \alpha \mathcal{X} \neq 0^{\mathfrak{F}(B)} \Leftrightarrow \mathcal{X} \sqcap \beta \mathcal{Y} \neq 0^{\mathfrak{F}(A)}$$

denotes a *funcoid*. Strictly speaking, a funcoid is a quadruple $(A; B; \alpha; \beta)$ conforming to the above formula.

Thus funcoids are a generalization of proximity spaces.

I call funcoids $(A; B; \alpha; \beta)$ funcoids from A to B and denote the set of funcoids from A to B as $\text{FCD}(A; B)$.