

Conjecture 2. The filtrator of funcoids is:

1. with separable core;
2. with co-separable core.

Conjecture 3. Let \mathcal{U} be a set, \mathfrak{F} be the set of f.o. on \mathcal{U} , \mathfrak{P} be the set of principal f.o. on \mathcal{U} , let n be an index set. Consider the filtrator $(\mathfrak{F}^n; \mathfrak{P}^n)$. Then if f is a completary multifuncoid of the form \mathfrak{P}^n , then $\uparrow\uparrow f$ is a completary multifuncoid of the form \mathfrak{F}^n .

Conjecture 4. Let f_1 and f_2 are monovalued, entirely defined funcoids with $\text{Src } f_1 = \text{Src } f_2 = A$. Then there exists a pointfree funcoid $f_1 \times^{(D)} f_2$ such that (for every filter x on A)

$$\langle f_1 \times^{(D)} f_2 \rangle x = \bigsqcup \{ \langle f_1 \rangle X \times^{\text{FCD}} \langle f_2 \rangle X \mid X \in \text{atoms } x \}.$$

(The join operation is taken on the lattice of filters with reversed order.)

A positive solution of this problem may open a way to prove that some funcoids-related categories are cartesian closed.

Conjecture 5. $b \not\prec^{\text{Anch}(\mathfrak{A})} \text{StarComp}(a; f) \Leftrightarrow \forall A \in \text{GR } a, B \in \text{GR } b, i \in n: A_i [f_i] B_i$ for anchored relations a and b on powersets.

It's consequence:

Conjecture 6. $b \not\prec^{\text{Anch}(\mathfrak{A})} \text{StarComp}(a; f) \Leftrightarrow a \not\prec^{\text{Anch}(\mathfrak{A})} \text{StarComp}(b; f^\dagger)$ for anchored relations a and b on powersets.

Conjecture 7. $b \not\prec^{\text{Strd}(\mathfrak{A})} \text{StarComp}(a; f) \Leftrightarrow a \not\prec^{\text{Strd}(\mathfrak{A})} \text{StarComp}(b; f^\dagger)$ for pre-staroids a and b on powersets.

Conjecture 8. $f \sqsubseteq \prod^{\text{RLD}} a \Leftrightarrow \forall i \in \text{arity } f: \text{Pr}_i^{\text{RLD}} f \sqsubseteq a_i$ for every multireloid f and $a_i \in \mathfrak{F}((\text{form } f)_i)$ for every $i \in \text{arity } f$.

Conjecture 9. $L \in [f] \Rightarrow [f] \cap \prod_{i \in \text{dom } \mathfrak{A}} \text{atoms } L_i \neq \emptyset$ for every pre-multifuncoid f of the form whose elements are atomic posets. (Does this conjecture hold for the special case of form whose elements are posets on filters on a set?)

Conjecture 10. The formula $f \sqcup^{\text{FCD}(\mathfrak{A})} g \in \text{cFCD}(\mathfrak{A})$ is not true in general for completary multifuncoids (even for multifuncoids on powersets) f and g of the same form \mathfrak{A} .

Conjecture 11. $\text{GR StarComp}(a \sqcup^{\text{pFCD}} b; f) = \text{GR StarComp}(a; f) \sqcup^{\text{pFCD}} \text{GR StarComp}(b; f)$ if f is a pointfree funcoid and a, b are multifuncoids of the same form, composable with f .

Conjecture 12. Every metamonovalued funcoid is monovalued.

Conjecture 13. Every metamonovalued reloid is monovalued.

Conjecture 14. Every monovalued reloid is metamonovalued.