

Classification of Smooth digraphs modulo pp-constructability

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We call a digraph smooth if every vertex has at least one incoming and one outgoing edge. We consider the set of all finite smooth digraphs ordered by pp-constructability, i.e., $\mathbb{A} \geq \mathbb{B}$ iff \mathbb{A} is pp-constructable from \mathbb{B} (iff there is a minion homomorphism from $\text{Pol}(\mathbb{B})$ to $\text{Pol}(\mathbb{A})$). In a recent result Barto, Kozik, and Niven showed that the core of a smooth digraph with a WNU is a disjoint union of directed cycles. Therefore we will mostly talk about disjoint unions of cycles. We will present a complete (and surprisingly nice) classification of this poset.