

Research Article

On Strong Monomorphisms and Strong Epimorphisms

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J. Dydak and F. R. Ruiz del Portal defined strong monomorphism and strong epimorphism in procategories. They obtained a useful characterization of them and some results. In this paper, we aim to study these notions further and obtain some properties of them.

1. Introduction

Dydak and Ruiz del Portal in [1] studied isomorphisms in procategories and obtained the following characterization of isomorphisms in procategories.

Proposition 1.1. *Let $f : X \rightarrow Y$ be a morphism in $\text{pro-}\mathcal{C}$ where \mathcal{C} is an arbitrary category. f is an isomorphism if and only if for any commutative diagram*

$$\begin{array}{ccc} X & \xrightarrow{f} & Y \\ a \downarrow & & \downarrow b \\ P & \xrightarrow{g} & Q \end{array}$$

with P, Q objects in \mathcal{C} , there is $h : Y \rightarrow P$ such that $g \circ h = b$ and $h \circ f = a$.

This characterization led them to introduce the notions of strong monomorphism and strong epimorphism in procategories. They studied them and obtained some results and a useful characterization of them.

In this paper, we study some properties of strong monomorphisms and strong epimorphisms in procategories.