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Natural sinks on Y_β

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Abstract: Let $(e_\beta : \mathbf{Q} \rightarrow Y_\beta)_{\beta \in \text{Ord}}$ be the large source of epimorphisms in the category Ury of Urysohn spaces constructed in [2]. A sink $(g_\beta : Y_\beta \rightarrow X)_{\beta \in \text{Ord}}$ is called natural, if $g_\beta \circ e_\beta = g_{\beta'} \circ e_{\beta'}$ for all $\beta, \beta' \in \text{Ord}$. In this paper natural sinks are characterized. As a result it is shown that Ury permits no (Epi, \mathcal{M}) -factorization structure for arbitrary (large) sources.

Keywords: epimorphism, Urysohn space, cointersection, factorization, natural sink, periodic, cowellpowered, ordinal

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